

Jan Erik Gulbrandsen • Arve Melhus

nye MEGA 8

Matematikk for ungdomstrinnet/ungdomssteget

Fasit

Grunnbok 8A

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3. utgave

2. opplag

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Skrift: Century Old Style 10pt

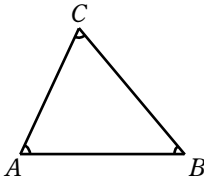
Papir: 115 g Arctic Volum

Trykk: Narayana Press, Danmark, 2007

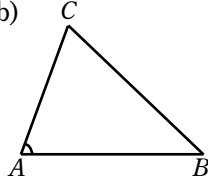
ISBN 978-82-04-12938-3

A11

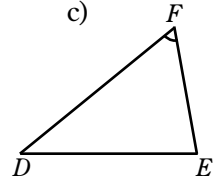
a)



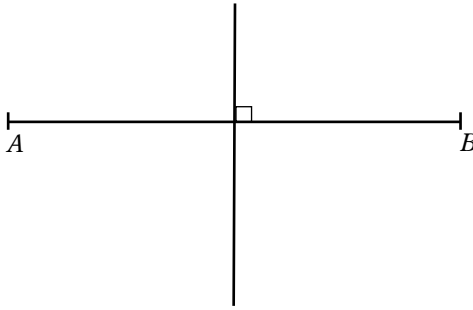
b)



c)

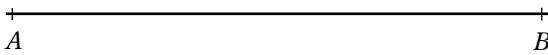


A13

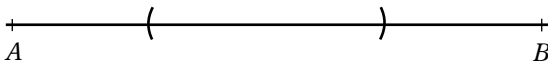


A 14

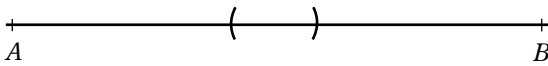
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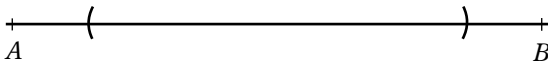
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c)

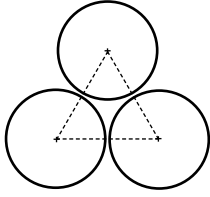


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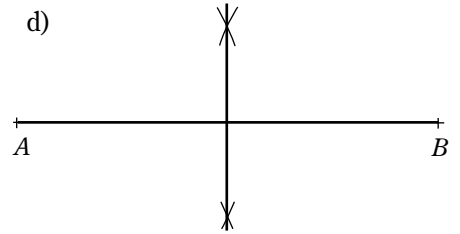
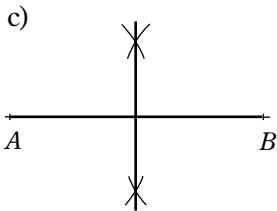
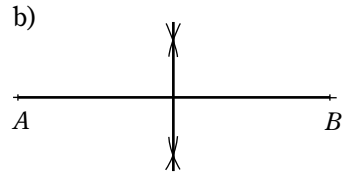
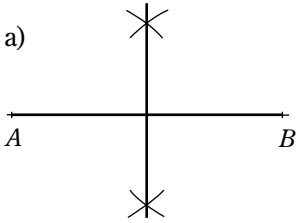
- e) De er symmetrisk plasserte i forhold til midtpunktet./
Dei er symmetrisk plasserte rundt midtpunktet.

A 15

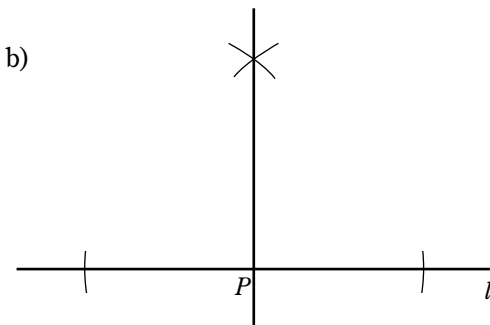
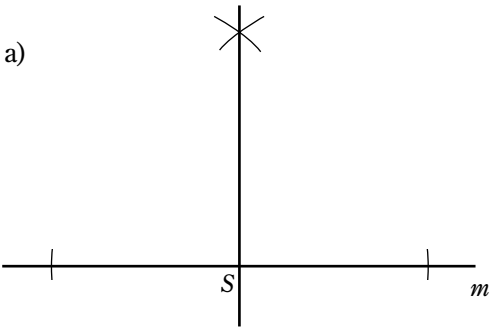


Likesidet trekant/Likesida trekant

A 16



A 17



A 18

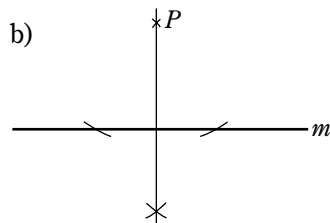
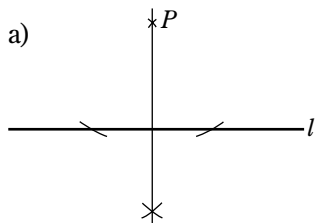
Konstruer normalen fra P på l , og mål afstanden fra P til punktet normalen krysser l . / Konstruer normalen fra P på l , og mål afstanden fra P til punktet normalen krysser l .

A 19

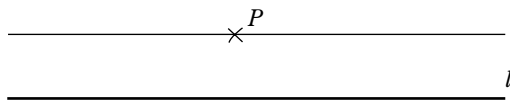
a) Linje 2

b) Det er normalen fra P på l . / Det er normalen fra P på l .

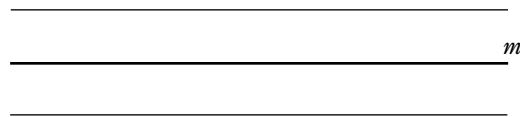
A 20



A 21



A 22



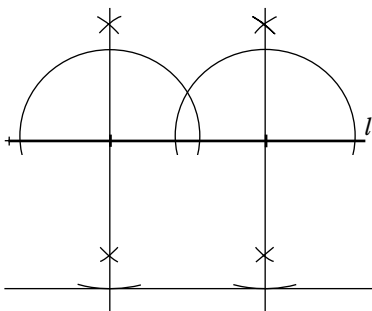
A 23

$AB \parallel ST$, $CD \parallel KL$, og $EF \parallel IJ \parallel QR$

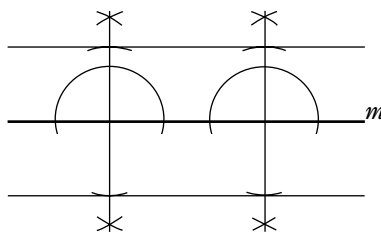
A 24

Linjestykke 2

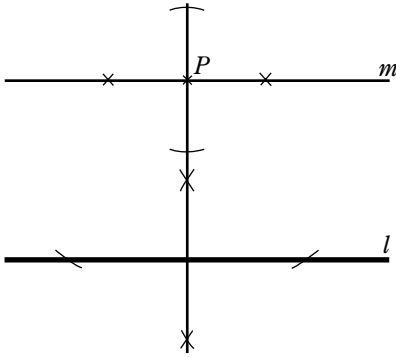
A 25



A 26

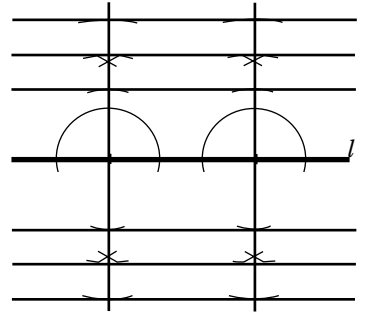


A 27

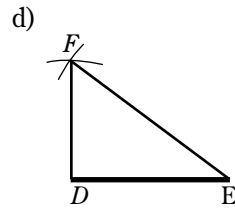
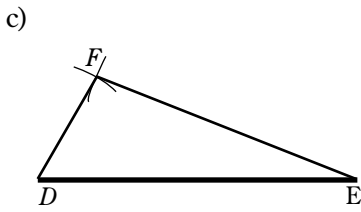
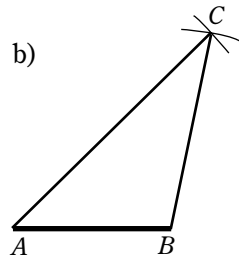
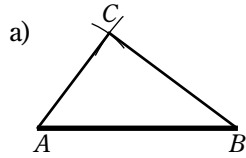


A 28

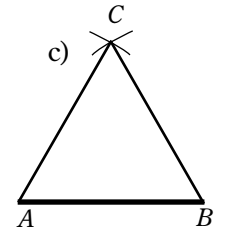
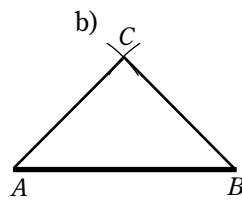
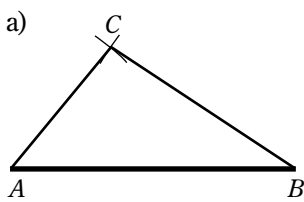
a)



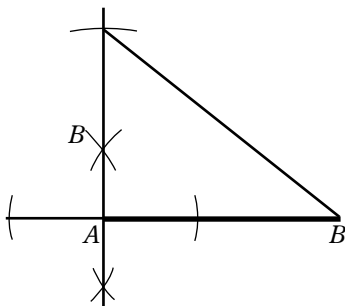
A 30



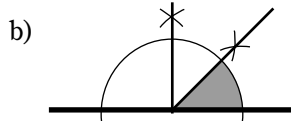
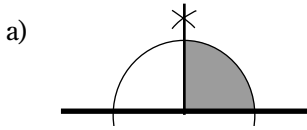
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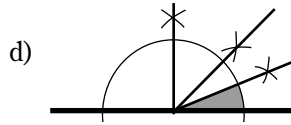
A 32



A 35



c) 45°

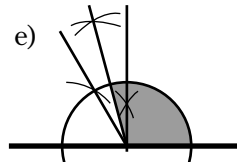
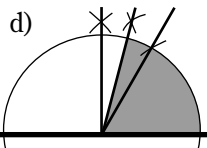
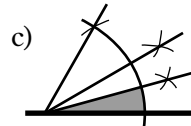
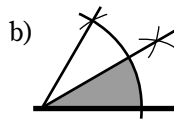
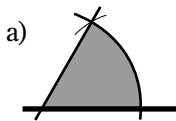


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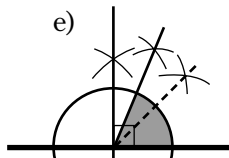
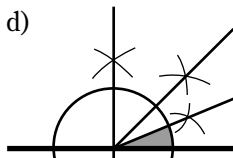
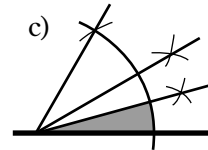
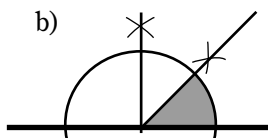
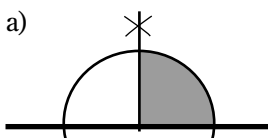
a) 135°

b) $67,5^\circ$

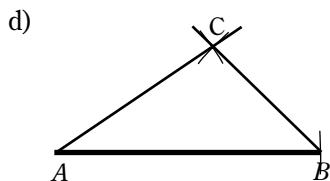
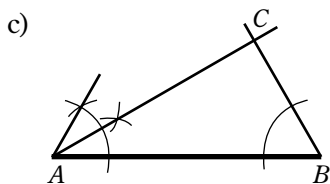
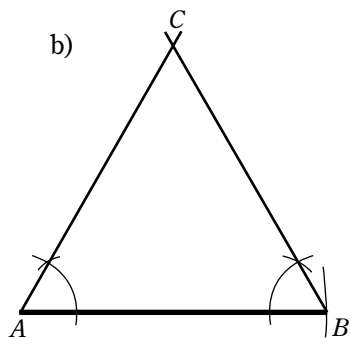
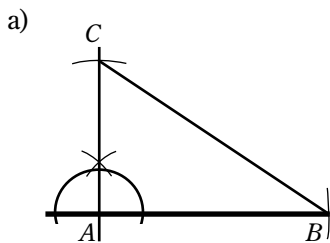
A 37



A 38



A 39



A 40

- a) $\angle A = \angle BAC$, $\angle B = \angle ABC$ og $\angle C = \angle ACB$
 b) $\angle D = \angle EDF$, $\angle E = \angle DEF$ og $\angle F = \angle DFE$
 c) $\angle X = \angle YXZ$, $\angle Y = \angle XYZ$ og $\angle Z = \angle XZY$
 d) $\angle K = \angle LKM$, $\angle L = \angle KLM$ og $\angle M = \angle KML$

A 41

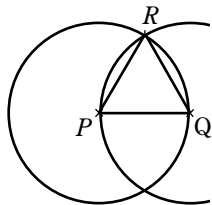
- a) 100° b) 60° c) 70° d) 20°

A 42

$\angle E = 60^\circ$

A 43

- a, b og c)



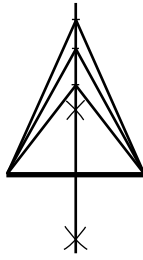
d,g) $\angle QPR = \angle RQP = \angle PRQ = 60^\circ$

e, f) $PQ = PR = QR$

A 44

a, b, c)

$AC = BC$, og $\angle BAC = \angle ABC$



d) $AD = BD$, og $\angle BAD = \angle ABD$

e) $AE = BE$, og $\angle BAE = \angle ABE$

A 45

a) Rettvinklet trekant/
Rettvinkla trekant

b) Likesidet trekant/
Likesida trekant

c) Likebeint trekant

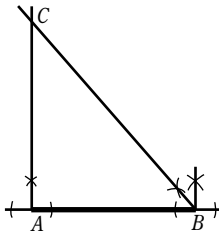
d) Rettvinklet og likebeint trekant/
Rettvinkla og likebeint trekant

e) Rettvinklet trekant/
Rettvinkla trekant

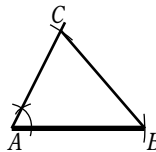
f) Likesidet trekant/
Likesida trekant

A 46

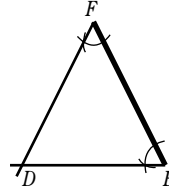
a)



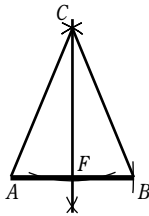
b)



c)



d)



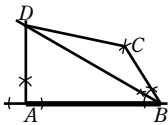
Likesidet trekant/
Likesida trekant

ΔABC er en likebeint trekant.

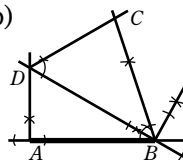
$AF = 3$ cm. Midtnormalen halverer linjestykket AB .

A 47

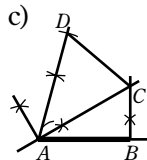
a)



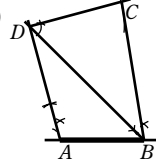
b)



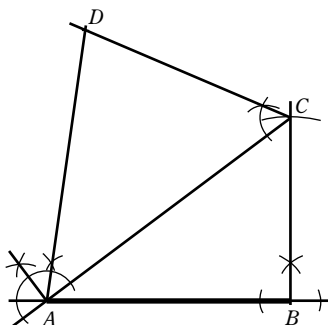
c)



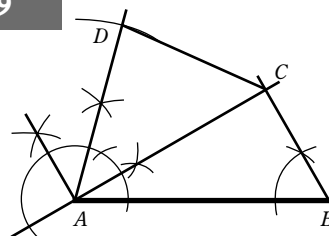
d)



A 48



A 49



BLÅ

A 50

- a) 9 cm b) 5,5 cm c) 10 cm d) 4,7 cm e) 7,3 cm

A 52

- a) 1) 3,8 cm 2) 4,3 cm 3) 8,1 cm 4) 10,5 cm
b) 1) 38 mm 2) 43 mm 3) 81 mm 4) 105 mm

A 53

- a) Tone 410 cm b) 45 cm
Iver 3,87 m
Gaute 3820 mm c) 13 cm
Liv 380 cm
Nina 3680 mm
Svenn 36,5 dm

A 54

- a) 1,4 dm > 9,0 cm b) 1,4 dm er 5 cm lengre enn 9,0 cm

A 55

- a) Den røde/Den raude b) 0,8 cm

A 57

- a) 7,32 m = 73,2 dm = 732 cm = 7320 mm
2,44 m = 24,4 dm = 244 cm = 2440 mm
b) 3,0 m = 30,0 dm = 300 cm = 3000 mm
2,0 m = 20,0 dm = 200 cm = 2000 mm
c) 1,83 m = 18,3 dm = 183 cm = 1830 mm
1,22 m = 12,2 dm = 122 cm = 1220 mm
d) 3,5 m = 35,0 dm = 350 cm = 3500 mm
2,1 m = 21,0 dm = 210 cm = 2100 mm

A 58

- a) 40°, spiss vinkel b) 90°, rett vinkel c) 115°, stump vinkel

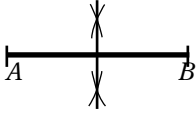
A 59

- a) 90° b) 60° c) 30°
d) 150° e) 210° f) 270°

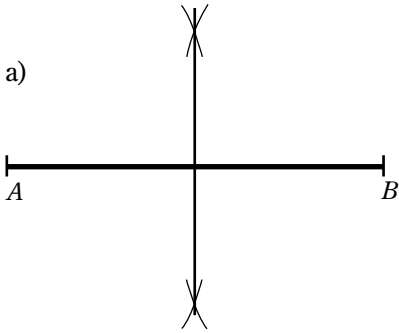
A 61

- a) Spiss vinkel b) Spiss vinkel c) Stump vinkel
d) Rett vinkel e) Spiss vinkel f) Spiss vinkel

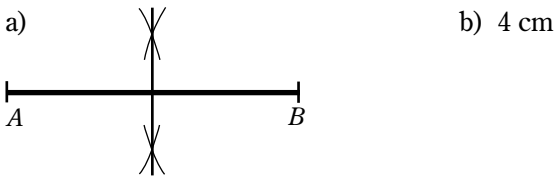
A 62



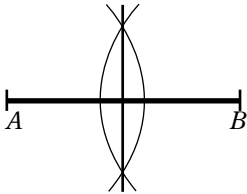
A 63



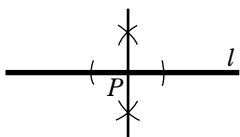
A 64



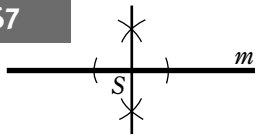
A 65



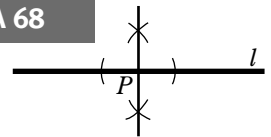
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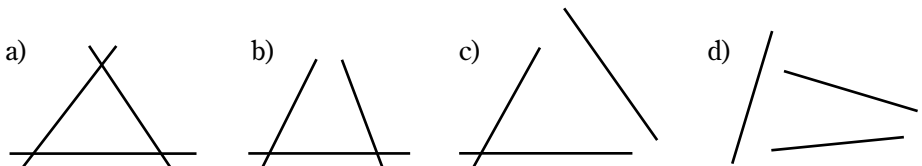
A 67



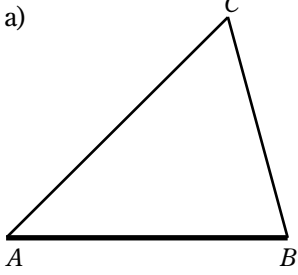
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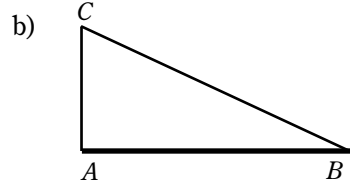
A 69



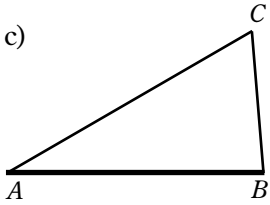
A 70



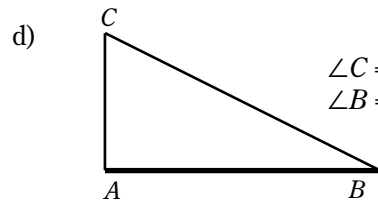
$\angle C = 60^\circ, \angle A + \angle B + \angle C = 180^\circ$



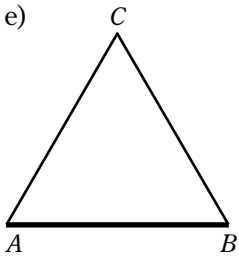
$\angle C = 55^\circ, \angle A + \angle B + \angle C = 180^\circ$



$\angle C = 65^\circ$

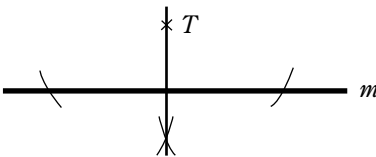


$\angle C = 65^\circ$
 $\angle B = 25^\circ$

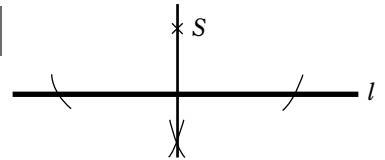


$AC = BC = 6,5 \text{ cm}, \angle C = 60^\circ$

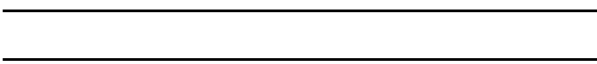
A 71



A 72

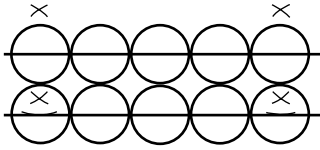


A 73

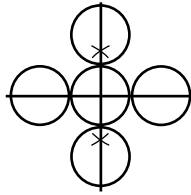


A 75

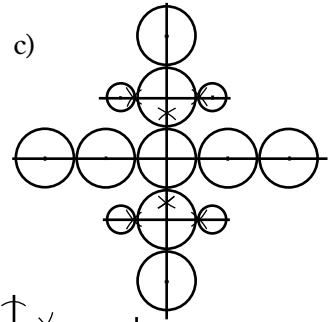
a)



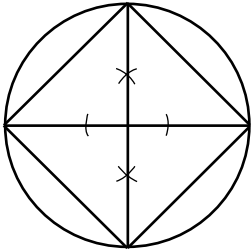
b)



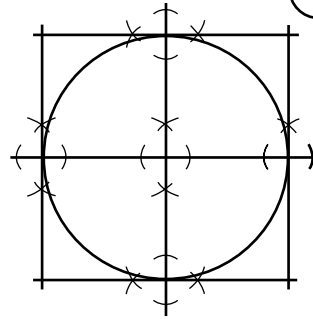
c)



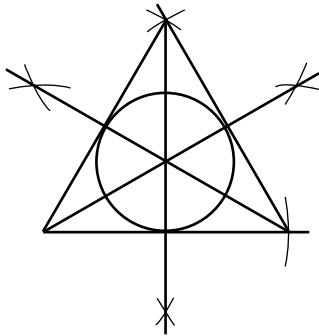
d)



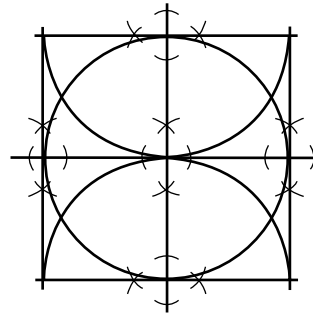
e)



f)



g)

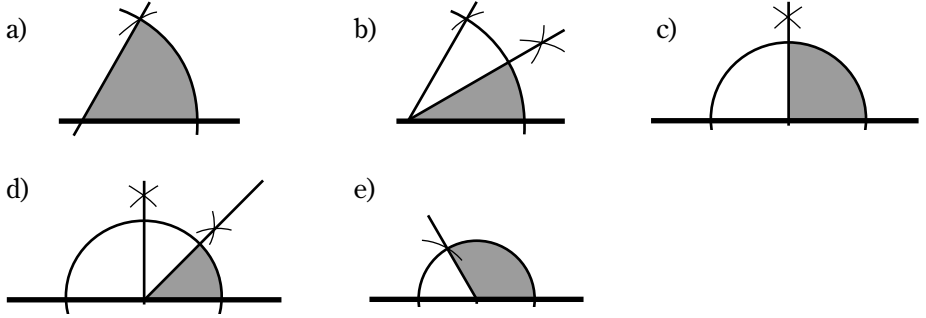
**A 76**a) 30° , 45° og 105°

b) spiss vinkel, spiss vinkel og stump vinkel

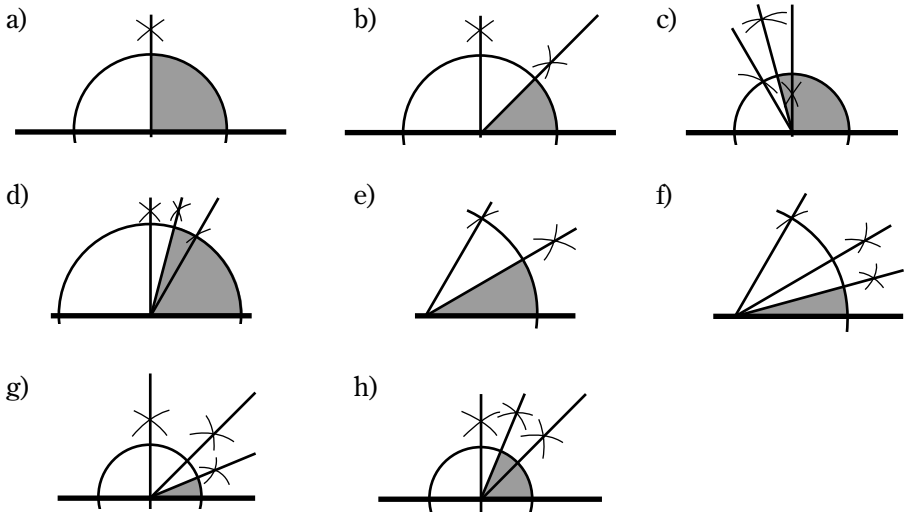
c) 15° , $22,5^\circ$, $52,5^\circ$ **A 77**

Når man tegner en vinkel, kan man benytte gradskive for å finne størrelsen på vinklene. Når man konstruerer en vinkel, kan man bare benytte passer og linjal./ Når ein teiknar ein vinkel, kan ein nytte gradskive for å finne storleiken på vinklane. Når ein konstruerer ein vinkel, kan ein berre nytte passar og linjal.

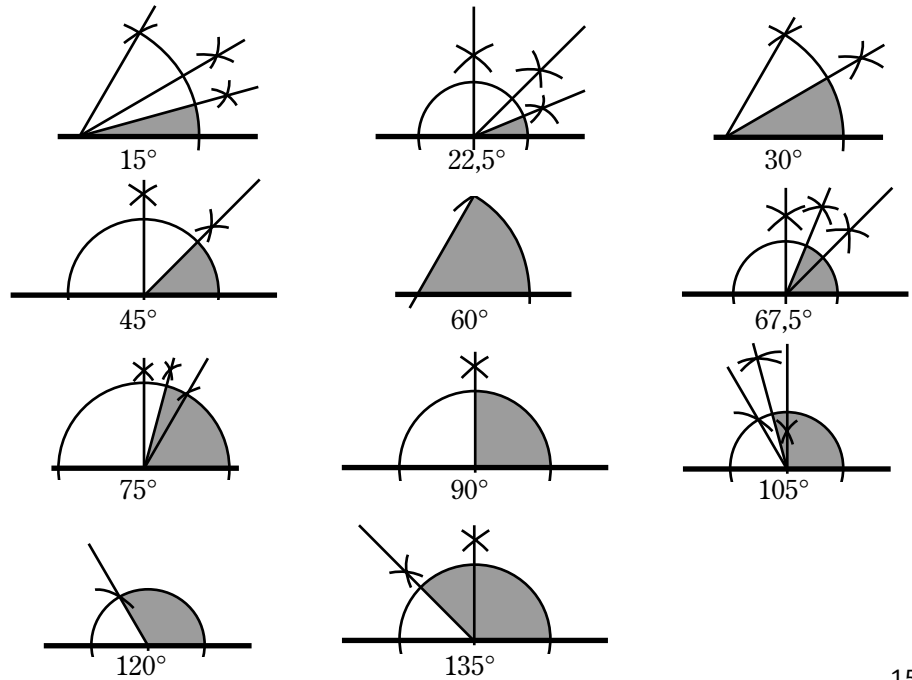
A 78



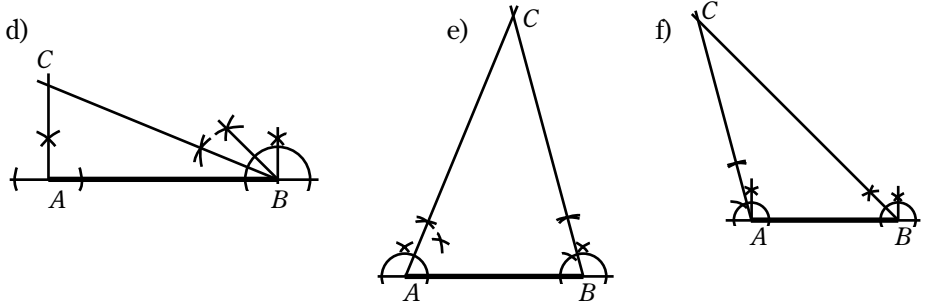
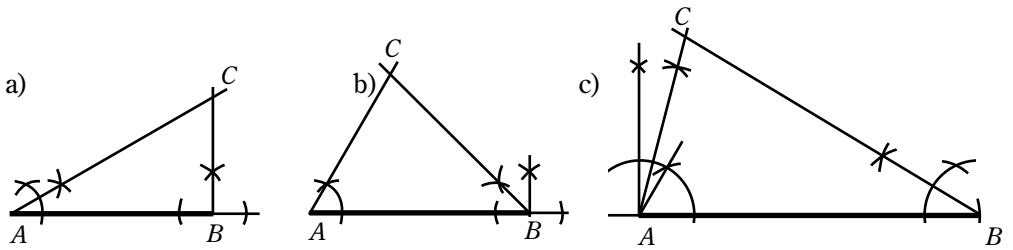
A 79



A 80

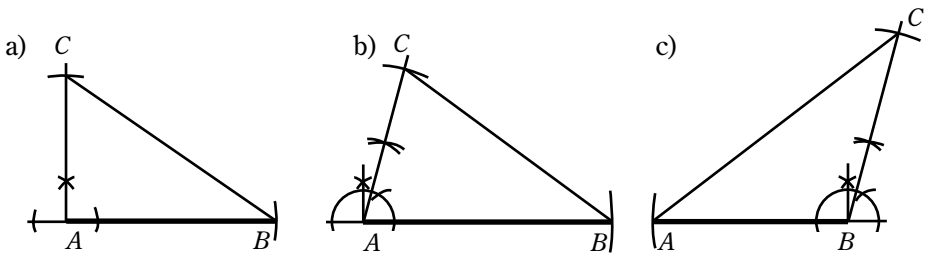


A 81

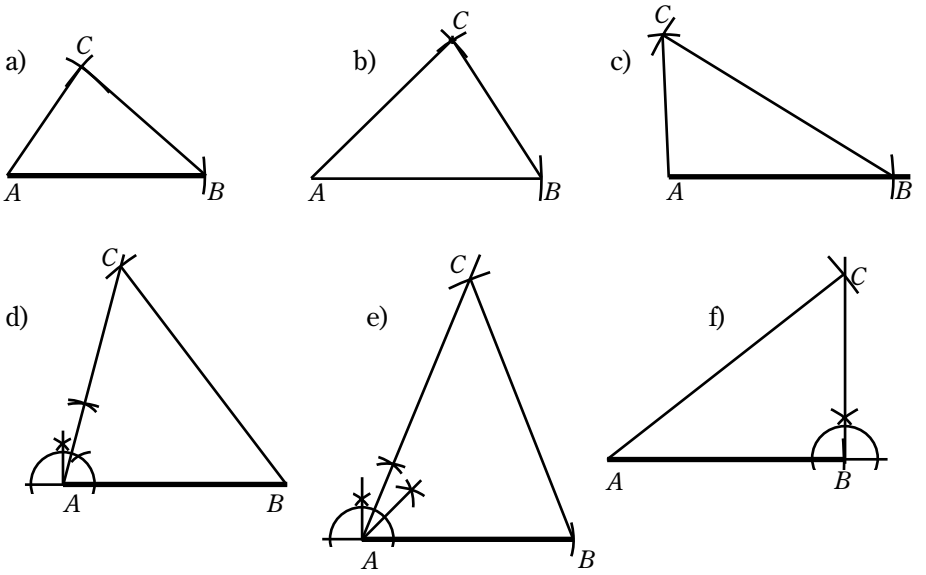


- g) 180° h) a) 60° b) 75° c) 75°
 d) $67,5^\circ$ e) $37,5^\circ$ f) 30°

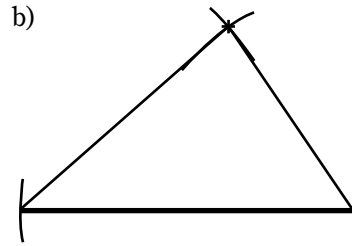
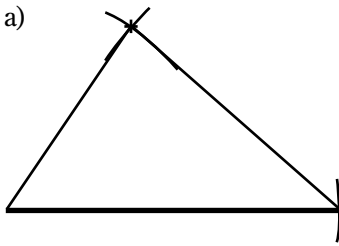
A 82



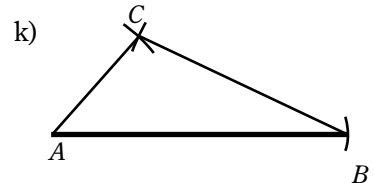
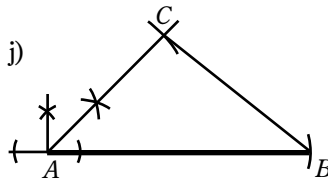
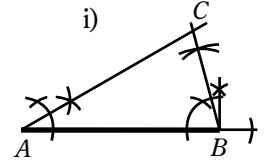
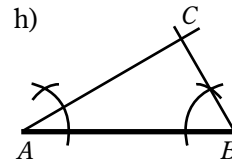
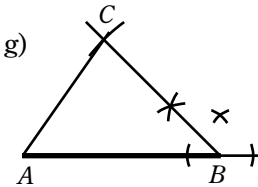
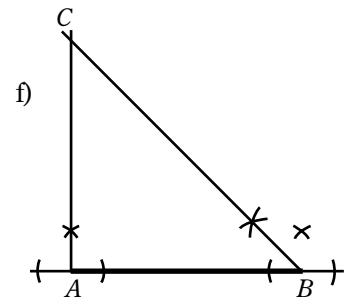
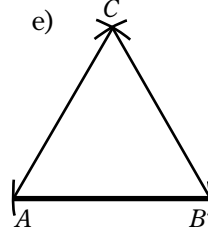
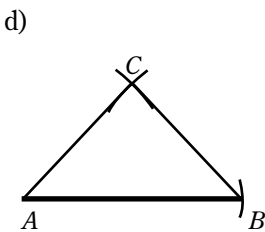
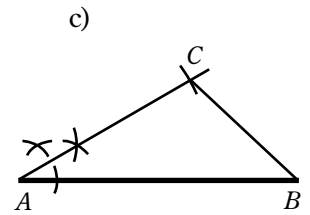
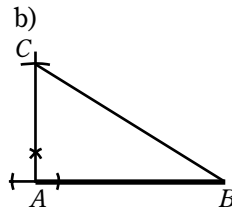
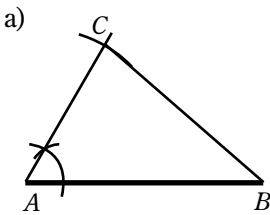
A 83



A 84



A 85



A 86

- En av vinklene må ha 90° ./Ein av vinklane må ha 90° .
- Like lange sider, og alle vinklene er 60° ./ Like lange sider, og alle vinklene er 60° .
- To av sidene er like lange.
- To av sidene er like lange, og vinkelen som knytter disse to sidene sammen er 90° ./To av sidene er like lange, og vinkelen som knytter disse to sidene saman er 90° .

A 87

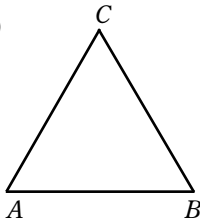
- a) Rettvinklet trekant/Rettvinkla trekant
 b) Rettvinklet trekant/Rettvinkla trekant
 c) Likesidet trekant/Likesida trekant
 d) Likebeint trekant
 e) Rettvinklet, likebeint trekant./Rettvinkla, likebeint trekant.
 f) Likebeint trekant

A 88

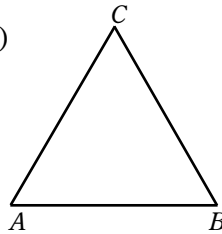
180°

A 89

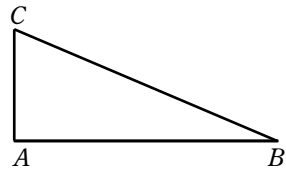
a)



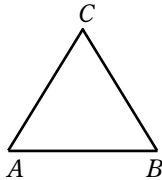
b)



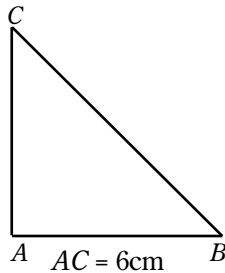
c)



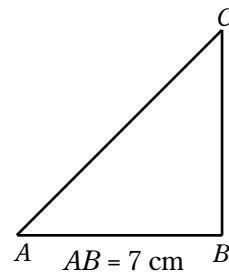
d)



e)



f)

**A 90**

80°

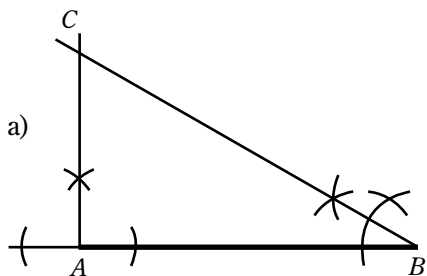
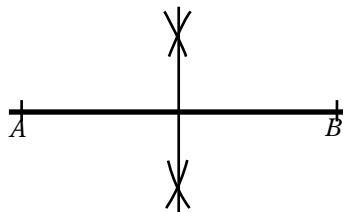
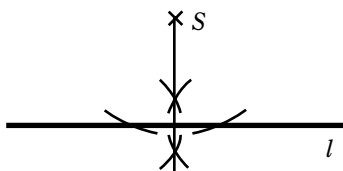
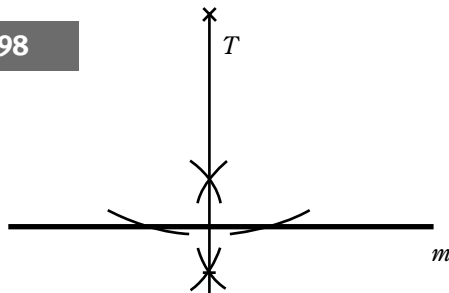
A 91

60°

A 92

90°, 45° og 45°

A 93 $\angle A = \angle B = 70^\circ$

A 94a)
 b) Rettvinklet trekant/Rettvinkla trekant**A 96****A 97****A 98****GUL****A 103**

Tor er 182 cm, og Line er 169 cm

A 104a) $0,03 \text{ m} = 0,3 \text{ dm} = 3 \text{ cm} = 30 \text{ mm}$ b) $0,089 \text{ m} = 0,89 \text{ dm} = 8,9 \text{ cm} = 89 \text{ mm}$ c) $0,059 \text{ m} = 0,59 \text{ dm} = 5,9 \text{ cm} = 59 \text{ mm}$ **A 105** $47 \text{ m} = 470 \text{ dm} = 4700 \text{ cm} = 47\,000 \text{ mm}$ **A 106** $8,91 \text{ m} = 89,1 \text{ dm} = 891 \text{ cm} = 8\,910 \text{ mm}$ **A 107**

a) 0,04 m

b) 0,057 m

c) 0,0069 m

d) 0,009 m

A 108

12,192 m

A 109

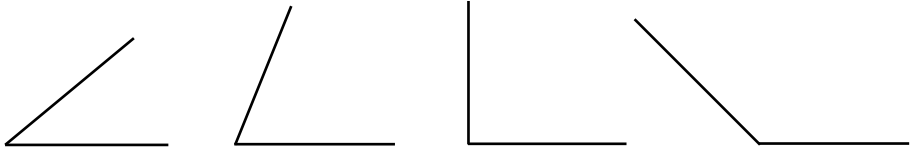
5,34 dm

A 110a) 45° b) 120° c) 18° d) 98°

A 111

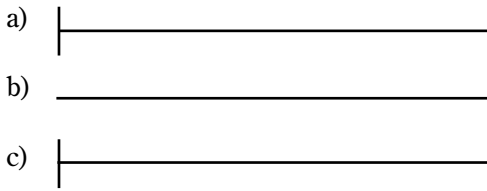
- a) 120° b) 45° c) 72°

A 112



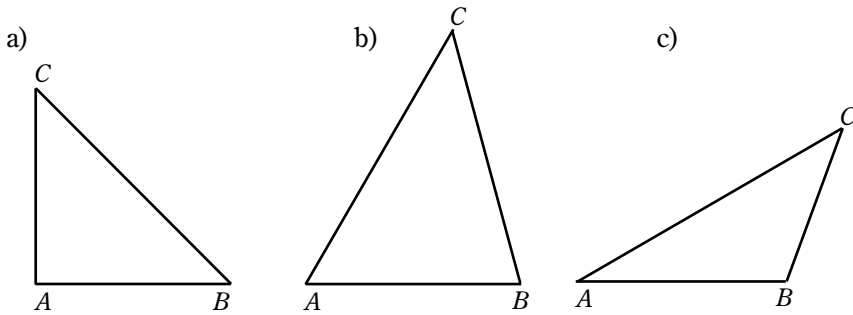
- a) Spiss vinkel b) Spiss vinkel c) Rett vinkel d) Stump vinkel

A 113



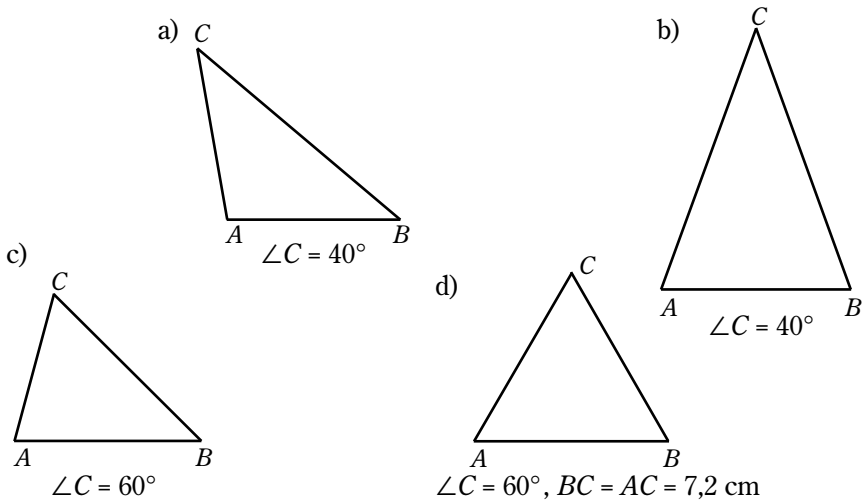
- a)
b)
c)

A 114

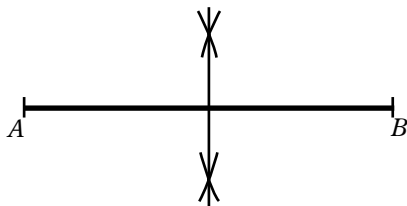


- d) Vinkelsummen i alle trekanter er 180°

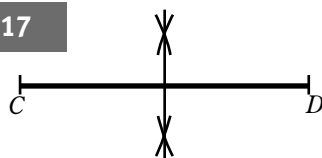
A 115



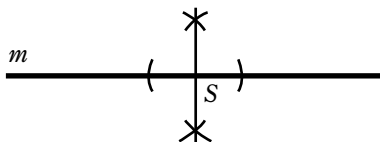
A 116



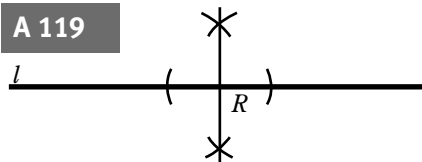
A 117



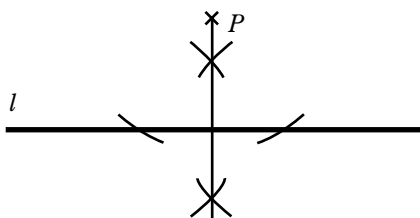
A 118



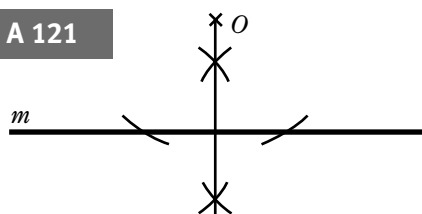
A 119



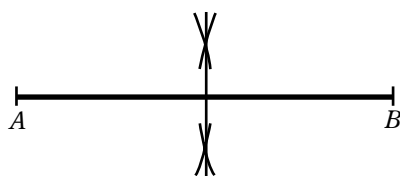
A 120



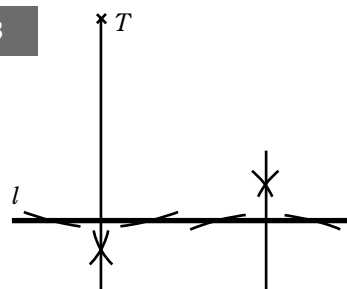
A 121



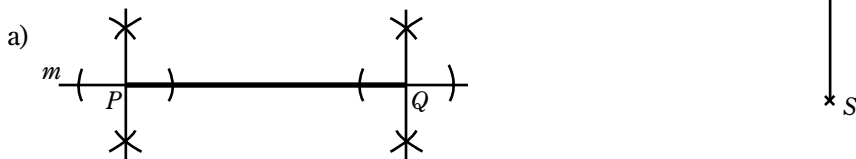
A 122



A 123

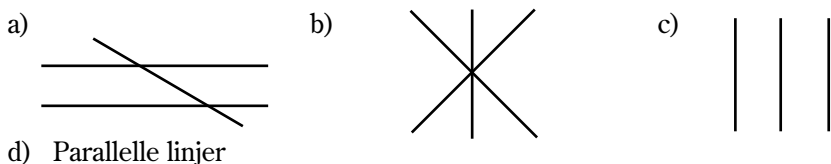


A 124



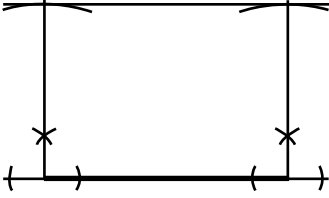
b) De to normalene vil aldri skjære hverandre, fordi de er parallelle med hverandre./Dei to normalane vil aldri skjære kvarandre, fordi dei er parallelle med kvarandre.

A 125

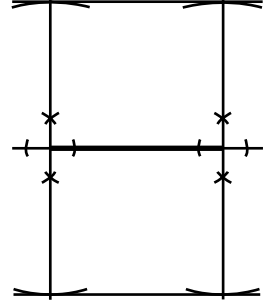


d) Parallele linjer

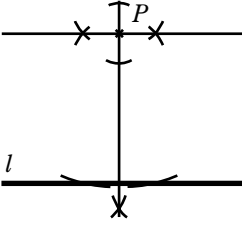
A 126



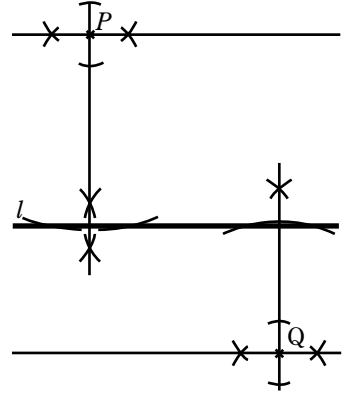
A 127



A 128

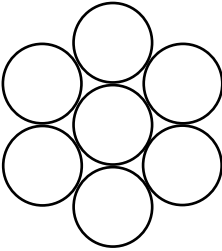


A 129

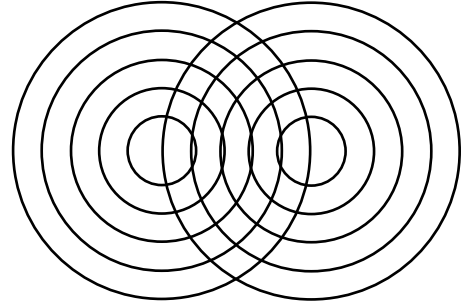


A 130

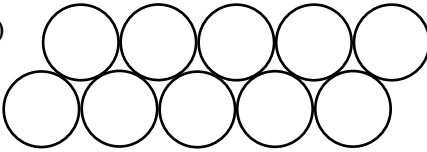
a)



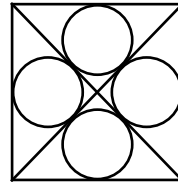
b)



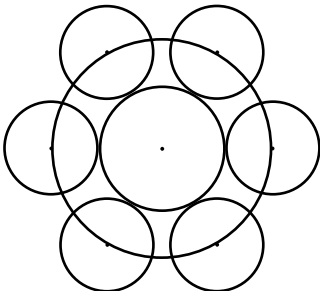
c)



d)

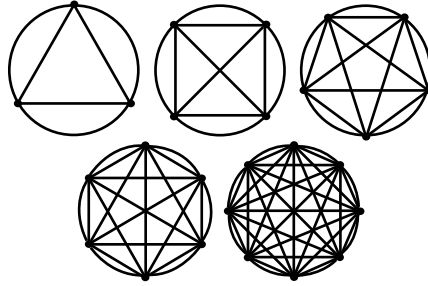


A 131



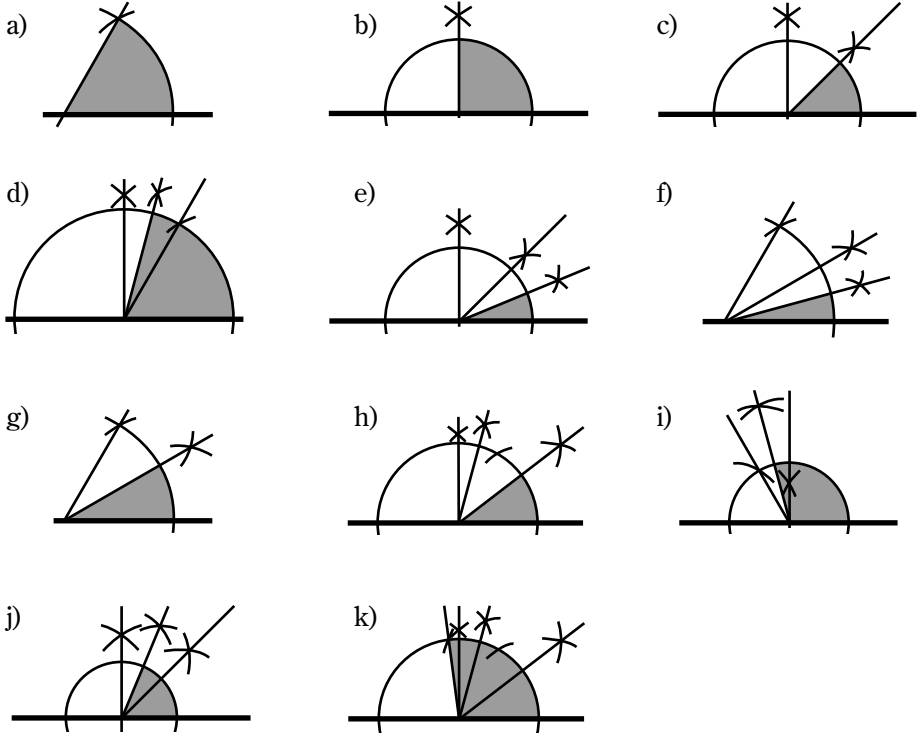
A 132

a, b)

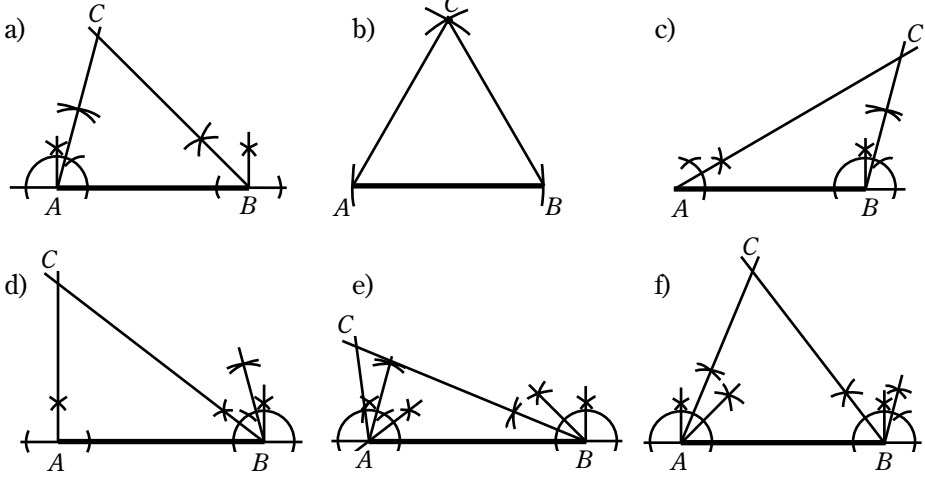


- c) Når man øker antall punkter med ett, vil antall linjer som kan trekkes mellom punktene, øke med like mange linjer som det var punkter før økningen./Når ein aukar talet på punkt med eit, vil talet på linjer som ein kan trekke mellom punkta, auke med like mange linjer som det var punkt før auken.

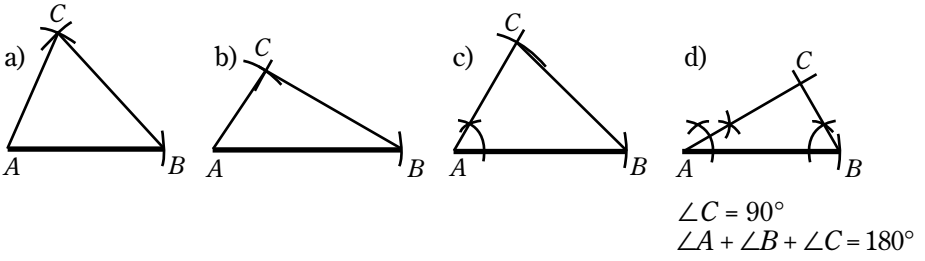
A 133



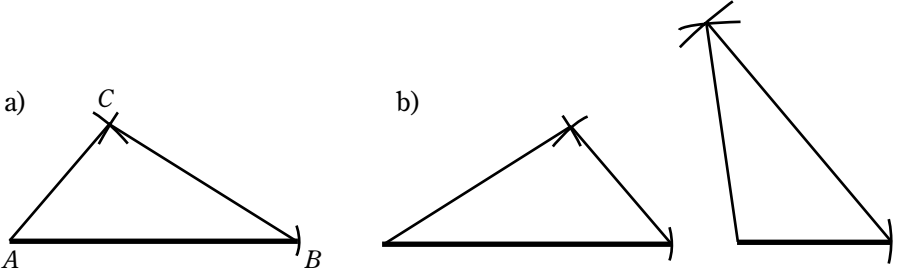
A 134



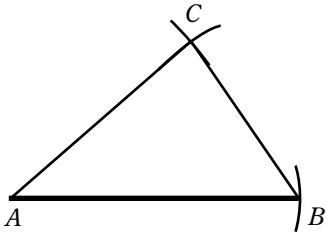
A 135



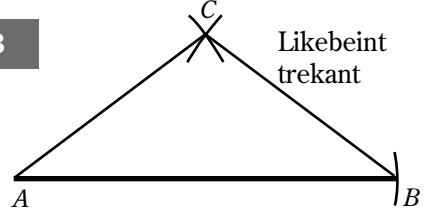
A 136



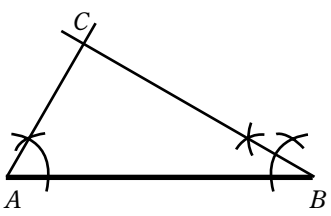
A 137



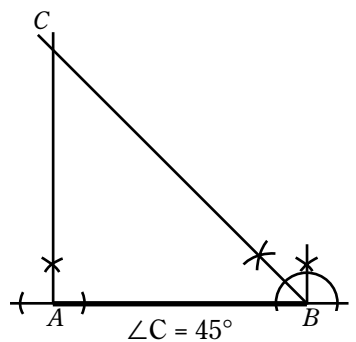
A 138



A 139

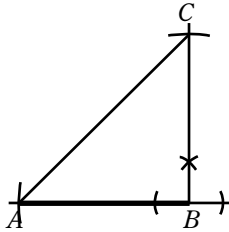
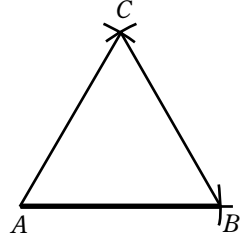


A 140

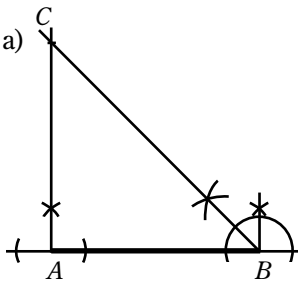


A 141

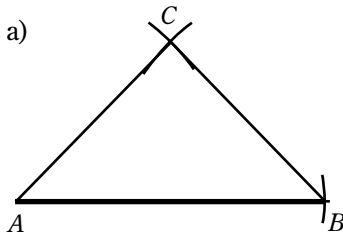
- a) Rettvinklet trekant/Rettvinkla trekant
- b) Likesidet trekant/Likesida trekant
- c) Rettvinklet trekant/Rettvinkla trekant
- d) Rettvinklet, likebeint trekant/Rettvinkla, likebeint trekant,
 $\angle A = 45^\circ$ og $\angle C = 45^\circ$
- e) Rettvinklet, likebeint trekant/Rettvinkla, likebeint trekant, $\angle C = 90^\circ$
- f) Likesidet trekant/Likesida trekant, $\angle A = \angle B = \angle C = 60^\circ$

A 142**A 143****A 144**

Nei, en rettvinklet trekant har en vinkel som er 90° , mens i likesidete trekanter er alle vinklene 60° ./Nei, ein rettvingla trekant har ein vinkel som er 90° , medan i likesida trekantar er alle vinklane 60° .

A 145

- b) $\angle A = 90^\circ$
- c) $AC = 6 \text{ cm}$
- d) Rettvinklet, likebeinet trekant./Rettvinkla, likebeinet trekant.

A 146

- b) Likebeint trekant

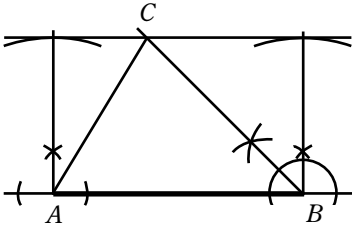
A 147

- a) 8
- b) 4 rettvinklet trekanter, 2 likebeint trekanter og 2 ordinære trekanter./
4 rettvingla trekantar, 2 likebeint trekantar og 2 ordinære trekantar.

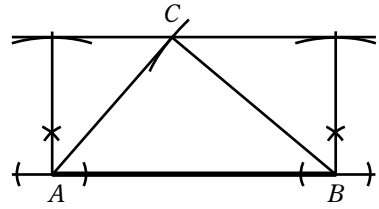
A 148

Ved sykkelstativet, og i granskogen.

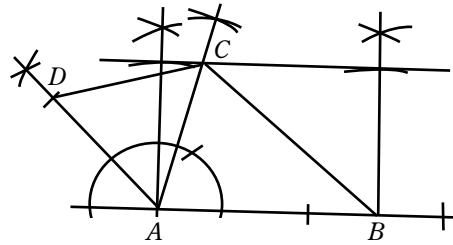
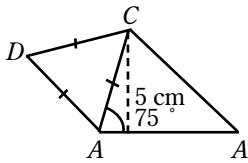
A 149



A 150

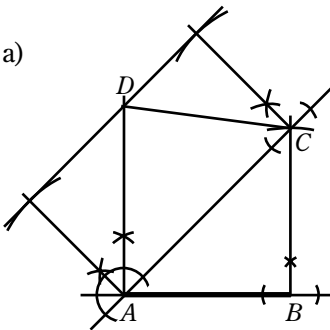


A 151



A 152

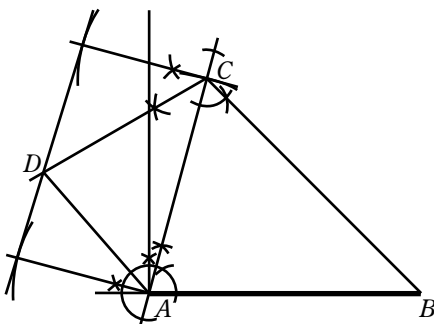
a)



b) $\angle BAC = \angle BCA = 45^\circ$ siden $\angle B = 90^\circ$ og $AB = BC$

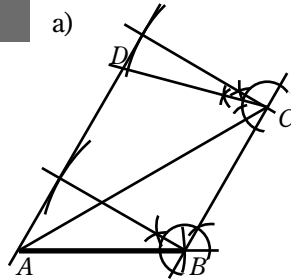
c) En rettvinklet, likebeint trekant./
Ein rettvinkla, likebeint trekant.

A 153



A 154

a)



b) ABC er likebeint trekant

RØD/RAUD

A 160

Vivi	Sanya	Kine	Solveig	Guri
474 cm	481 cm	485 cm	494 cm	497 cm

A 163

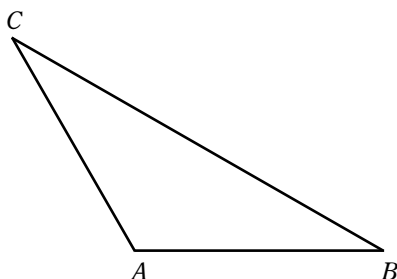
- a) 14,63 m b) 4,272 dm c) 25 fot

A 164

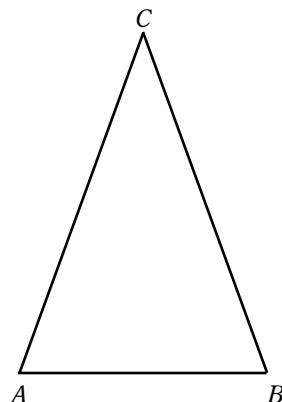
- a) 1 yard = 0,9144 m b) 1 mile = 1609 m

A 166

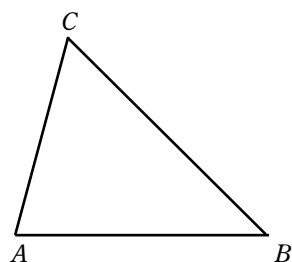
a)



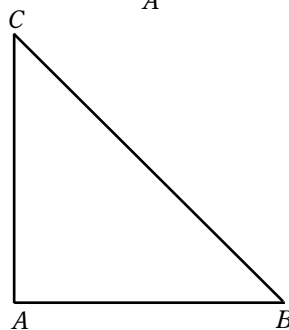
b)



c)



d)



A 167

30°, 60° og 90°

A 168

40°, 70° og 70°

A 169

- a) 180° b) 180° c) 180°

A 170

- a) 360° b) 360° c) 360°

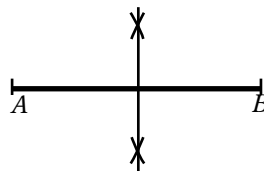
A 171

Alle trekanter har vinkelsum lik 180°, og alle firkanter har vinkelsum lik 360°./
Alle trekantar har vinkelsum lik 180°, og alle firkantar har vinkelsum lik 360°.

A 172

40°, 60° og 80°

A 173



A 174

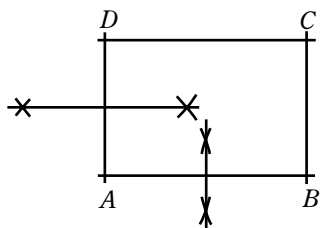
a) 30°

b) 73°

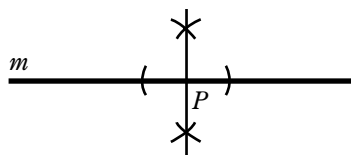
c) 132°

d) 80°

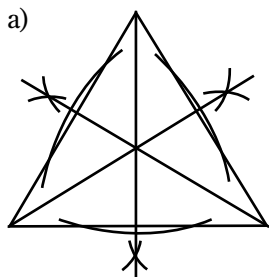
A 175



A 176



A 177

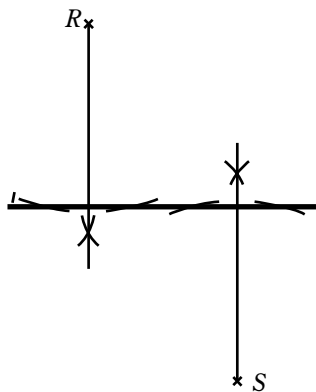


- b) De tre midtnormalene skjærer hverandre i ett og samme punkt./
Dei tre midtnormalane skjær kvarandre i eitt og same punkt.

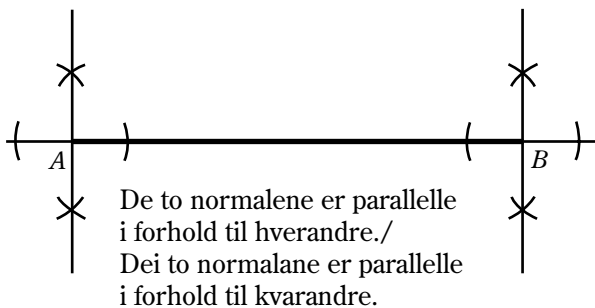
Forslag

- c) Midtnormalene i en trekant treffer alltid i samme punkt./M...

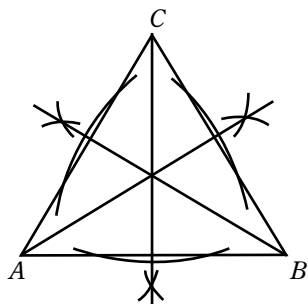
A 178



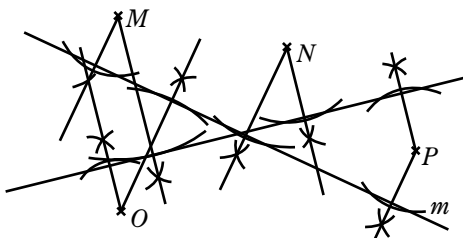
A 179



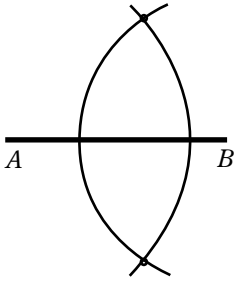
A 180



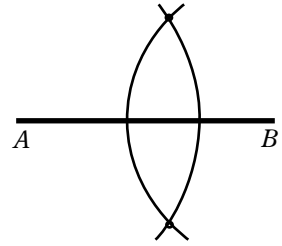
A 181



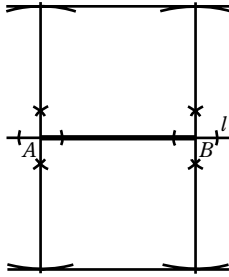
A 182



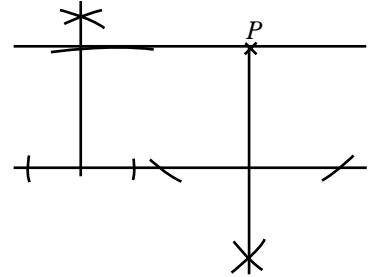
A 183



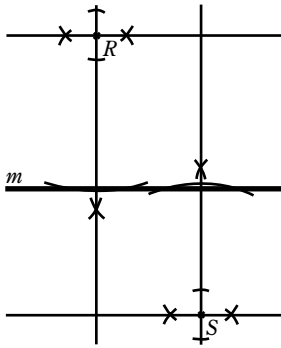
A 184



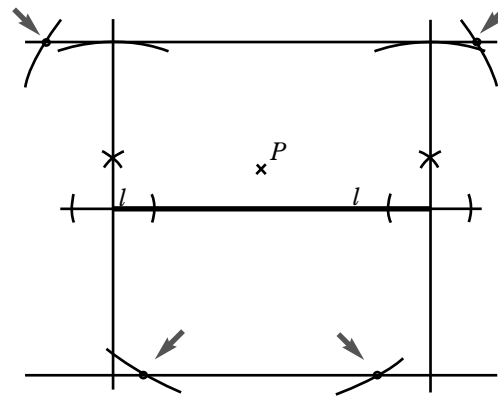
A 185



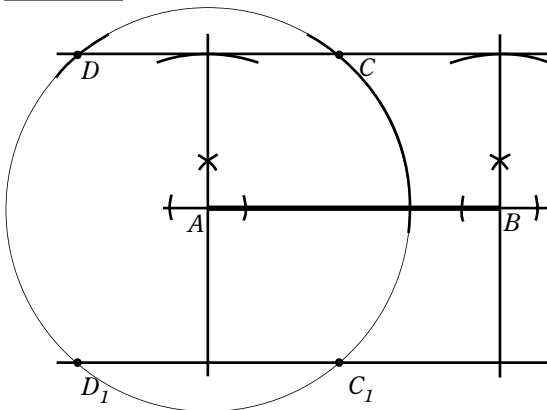
A 186



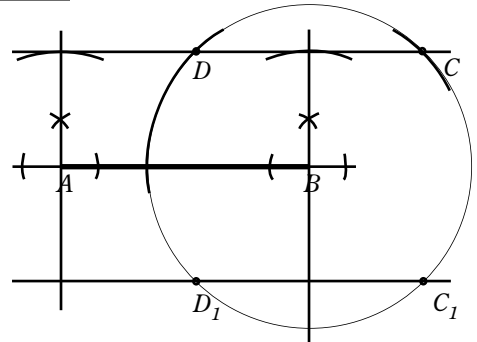
A 187



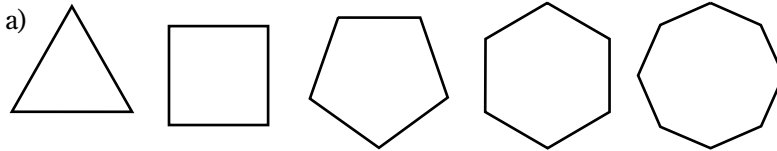
A 188



A 189

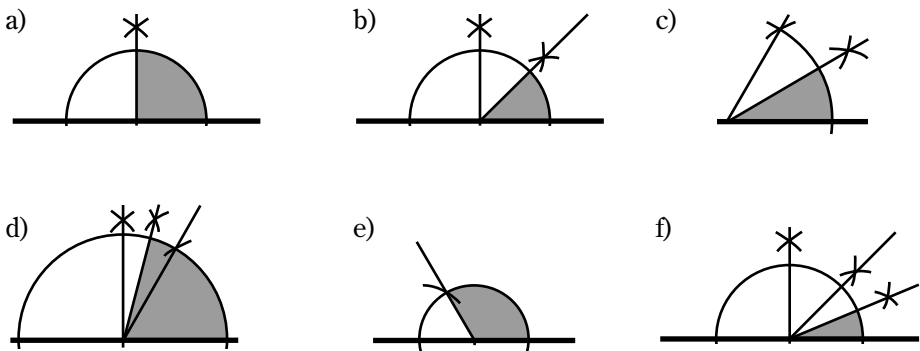


A 190



- b) Trekanter har vinkelsum på 180° , firkanter har vinkelsum på 360° , femkanter har vinkelsum på 540° , sekskanter har vinkelsum på 720° og åttekanter har vinkelsum på 1080° . / Trekantar har vinkelsum på 180° , firkantar har vinkelsum på 360° , femkantar har vinkelsum på 540° , sekskantar har vinkelsum på 720° og åttekantar har vinkelsum på 1080° .
- c) Antall sider, minus to, multipliser med 180° . / Talet på sider, minus to, multipliser med 180° .

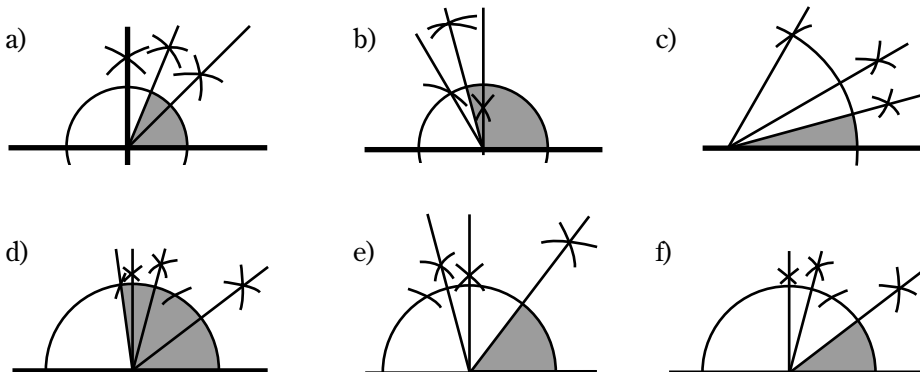
A 191



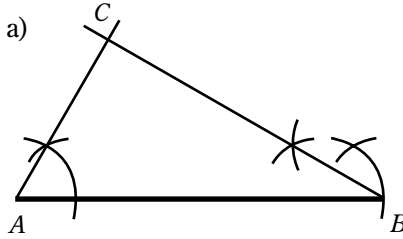
A 192

Når man tegner en vinkel, benytter man linjal og gradskive.
Når man konstruerer en vinkel, kan man bare benytte passer og linjal. /
Når ein teiknar ein vinkel, nyttar ein linjal og gradskive.
Når ein konstruerer ein vinkel, kan ein berre nytte passar og linjal.

A 193



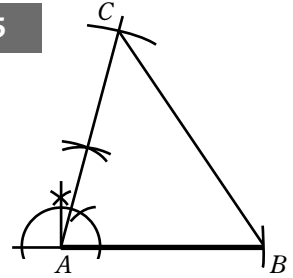
A 194



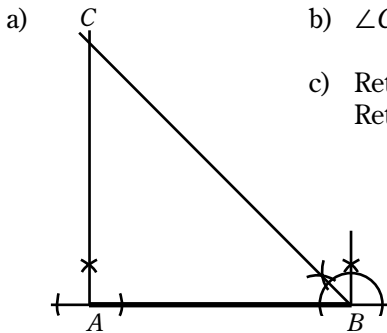
b) $\angle C = 90^\circ$

c) Rettvinklet trekant/Rettvinkla trekant

A 195



A 196



b) $\angle C = 45^\circ$

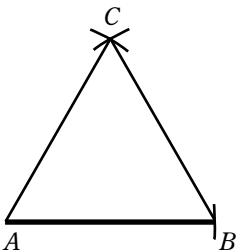
c) Rettvinklet, likebeint trekant./
Rettvinkla, likebeint trekant.

A 197

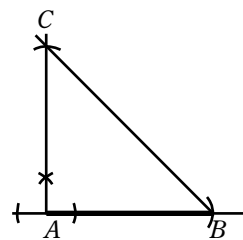
- a) Rettvinklet trekant./
Rettvinkla trekant.
- c) Likebeint trekant
- e) Likesidet trekant./
Likesida trekant.

- b) Likesidet trekant./
Likesidet trekant.
- d) Rettvinklet, likebeint trekant./
Rettvinkla, likebeint trekant.
- f) Rettvinklet, likebeint trekant
Rettvinkla, likebeint trekant

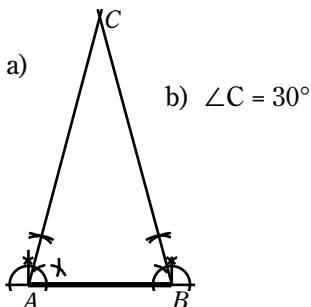
A 198



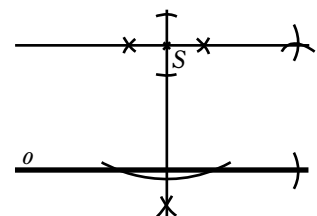
A 199



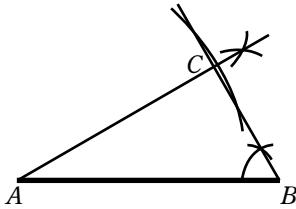
A 200



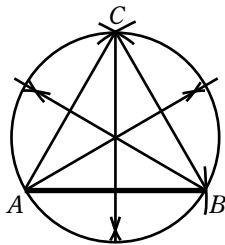
A 201



A 202



A 203

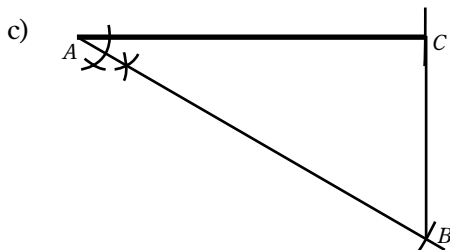
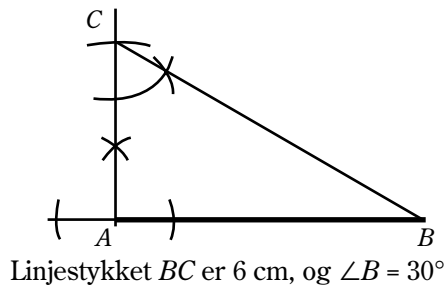
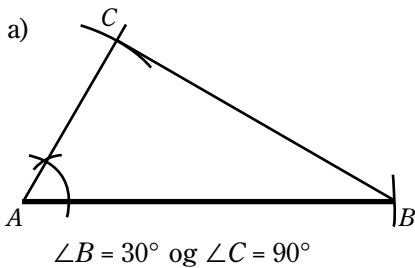


- c) Midnormalene har skjæringspunkt midt i trekanten./Midnormalane har skjæringspunkt midt i trekanten.
- e) En passerstrek med denne radien lager en sirkel rundt hjørnene av trekanten./Ein passarstrek med denne radien lagar ein sirkel kring hjørna av trekanten.

A 204

I en likesidet trekant er alle vinklene 60° og kan derfor ikke være en rettvinklet trekant.

A 205

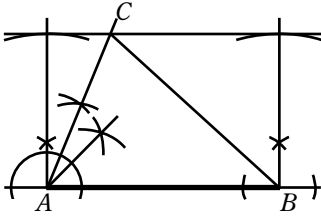


- d) Vinklene er:
Vinklane er:
 $30^\circ, 60^\circ$ og 90°

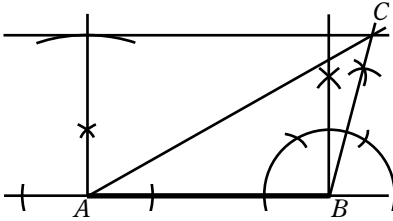
Linjestykket BC er 6 cm, $\angle B = 60^\circ$

- e) Den korte kateten er halvparten så lang som hypotenusen.

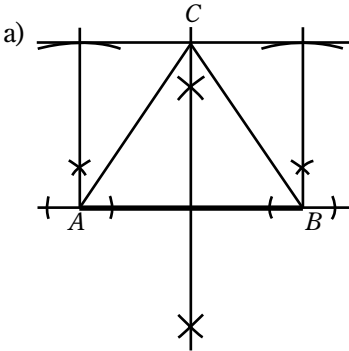
A 206



A 207

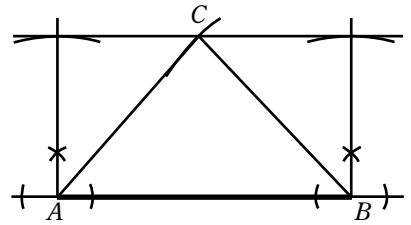


A 208

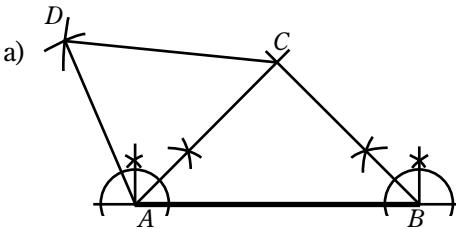


b) Likebeint trekant.

A 209



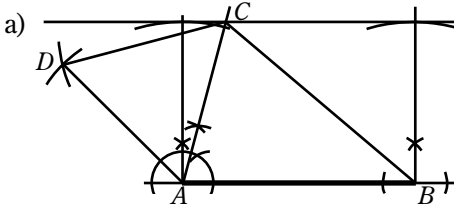
A 210



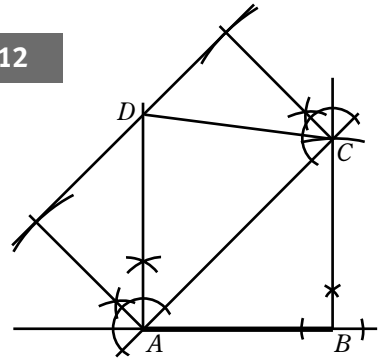
b) 90°

c) Rettvinklet, likebeint trekant./
Rettvinkla, likebeint trekant.

A 211

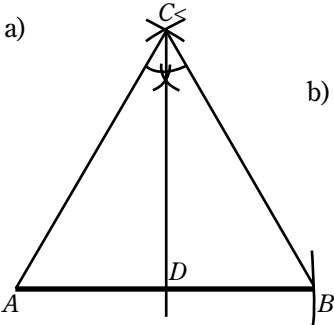


A 212

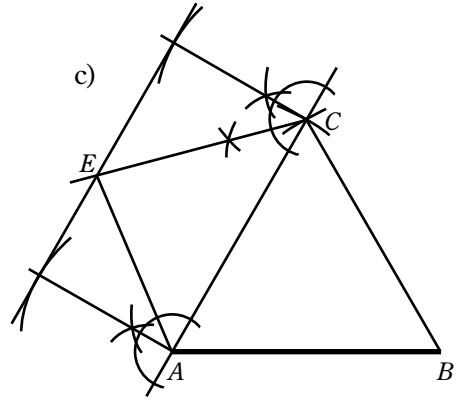


- b) $\angle BAC = \angle ACB = 45^\circ$,
fordi $AB = BC$ og $\angle B = 90^\circ$
c) Rettvinklet, likebeint trekant./
Rettvinkla, likebeint trekant.

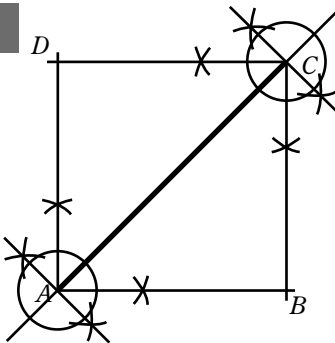
A 213



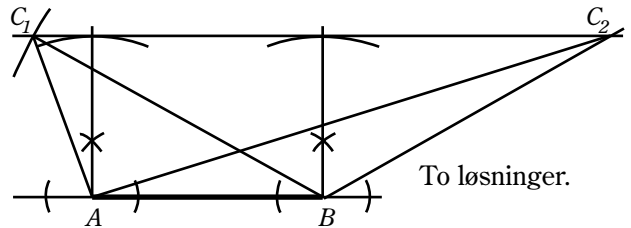
- b) $\angle ACD = \angle BCD = 30^\circ$, $\angle ADC = \angle BDC = 90^\circ$



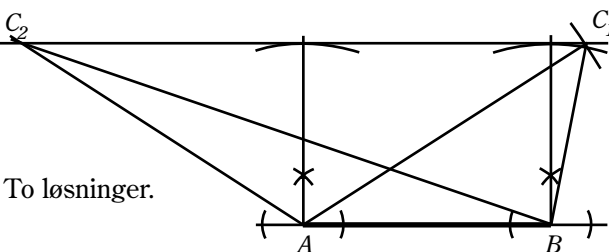
A 214



A 215

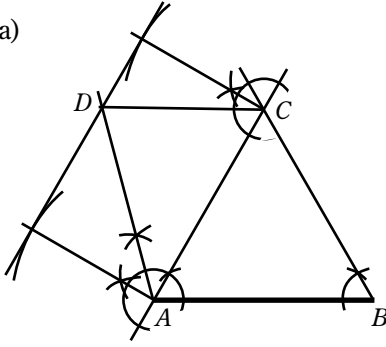


A 216



A 217

a)

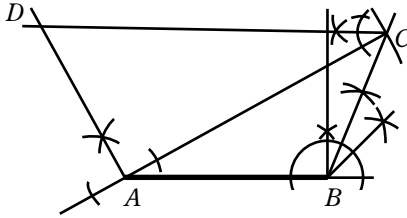


b) $AC = BC = 7$ cm

c) $\angle ACB = 60^\circ$. Likesidet trekant./ Likesida trekant.

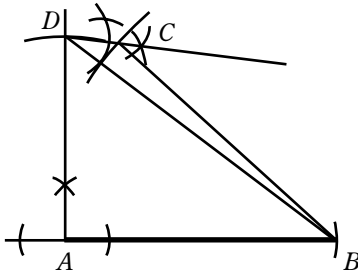
A 218

a)

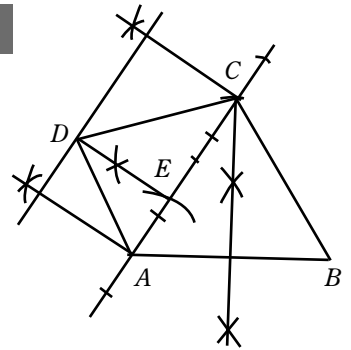


b) Rettvinklet trekant./ Rettvinkla trekant.

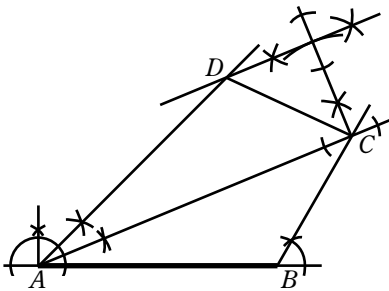
A 219



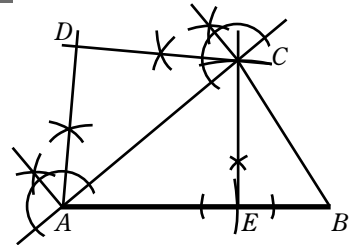
A 220



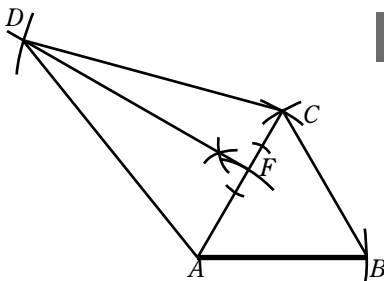
A 221



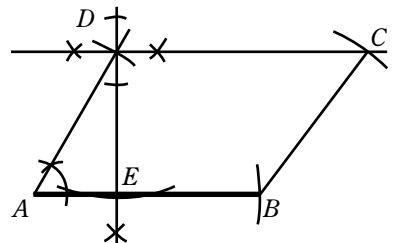
A 222



A 223



A 224



PRØV DEG SELV/PRØV DEG SJØLV

PA 1

- a) Linje b) Linjestykke c) Stråle

PA 2

- a) Toppunkt b) Venstre vinkelbein
c) Størrelse på vinkelen i grader/
Storleiken på vinkelen i gradar d) Høyre vinkelbein/
Høyre vinkelbein

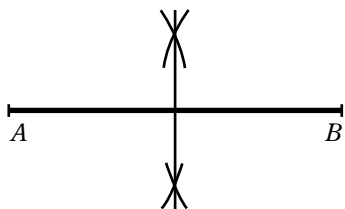
PA 3

- a) 5 m b) 1200 m c) 0,035 m
d) 0,012 m e) 0,32 m f) 0,00012 m

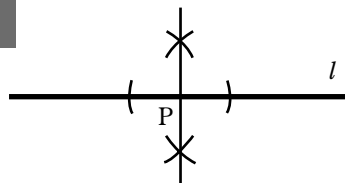
PA 4

- a) 30° , spiss vinkel b) 90° , rett vinkel c) 95° , stump vinkel

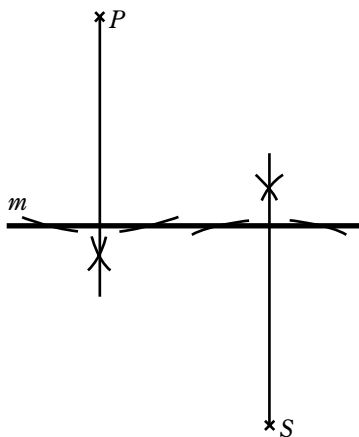
PA 5



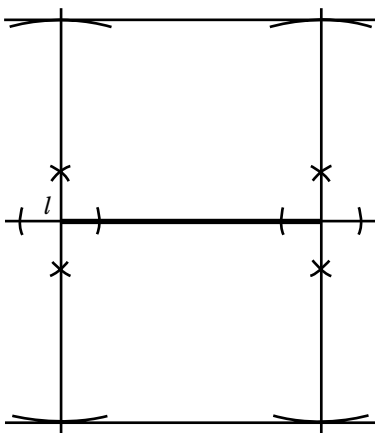
PA 6



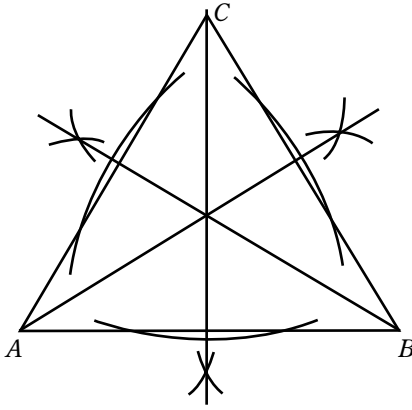
PA 7



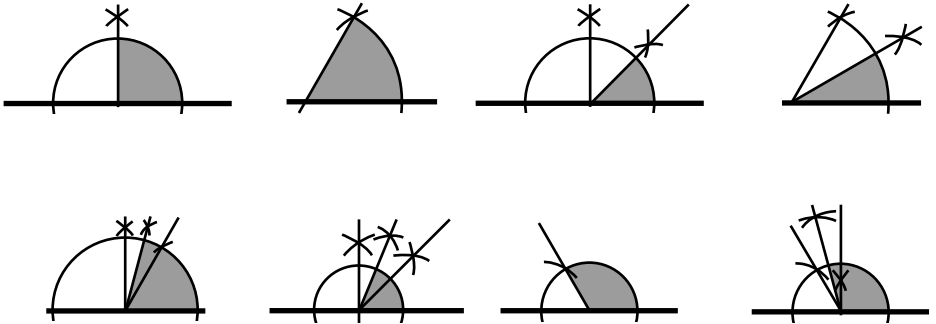
PA 8



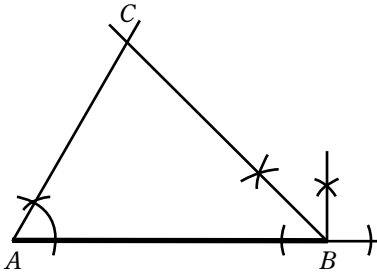
PA 9



PA 10



PA 11



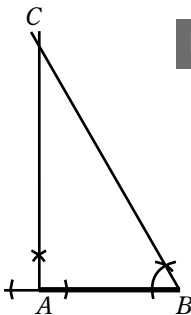
PA 12

$\angle C = 70^\circ$

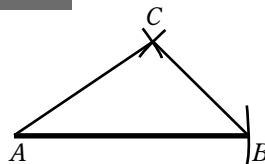
PA 13

$\angle BAC, \angle CAD$ og $\angle ACB$

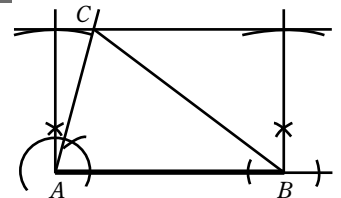
PA 14



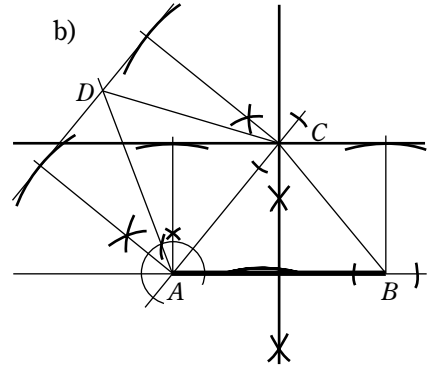
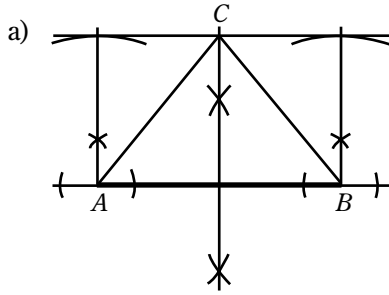
PA 15



PA 16



PA 17



FYLKESOPPGAVE TROMS/ FYLKESOPPGAVE TROMS

FA 1

- a) 62 558 innbyggere/
innbyggjarar b) 152 740 innbyggere/
innbyggjarar c) 2 437 innbyggere/
innbyggjarar

FA 2

820 m

FA 3

- a) 4 280 mm b) 71,3 mm/døgn c) 10,0 cm

FA 4

75,8 °C

FA 4

- a) 139 år i 2007s b) 36,3 m

FA 6

946 000 kr

FA 7

1 488 timer/timar

FA 8

- c) Tromsø

FASIT TIL KAPITTEL B

B 2 a) Anne b) Kr per l og antall liter./Kr per l og talet på liter.

B 3 Mette

- B 4**
- a) Hvor gammel han er nå./Kor gammel han er no.
 - b) Du trenger vekten på bilen og passasjerene./
Du treng vekta på bilen og passasjerane
 - c) Du trenger informasjon om alderen til Amir i forhold til en av de to andre./
Du treng informasjon om alderen til Amir i forhold til ein av dei to andre.
 - d) Svaret er gitt i teksten.
 - e) All informasjonen du trenger er tilgjengelig./
All informasjonen du treng er tilgjengeleg.

B 5 a) 85,27 kroner b) 101,67 kroner

B 6 32 år **B 7** 4 sekunder/4 sekund

B 8 $21 + 3 = 24$ $24 - 3 = 21$ $8 \cdot 3 = 24$ $24 : 3 = 8$

B 9 240 kroner **B 10** 33 kroner

B 11 96 elever/96 elevar **B 12** 6 klementiner/6 klementinar

B 13 69,60 kroner **B 14** Alternativ e) gir rett svar

B 15 Alternativ d) gir rett svar **B 16** Elisabeth

B 17 a) 69 b) 89 c) 89 d) 183

B 18

- | | | |
|-------|--------|--------|
| a) 40 | b) 20 | c) 60 |
| d) 60 | e) 120 | f) 410 |

B 19

- | | | |
|-------|-------|--------|
| a) 12 | b) 24 | c) 16 |
| d) 30 | e) 80 | f) 135 |
| g) 28 | h) 1 | |

B 20

- | | | |
|-------|------|------|
| a) 10 | b) 3 | c) 6 |
| d) 5 | e) 3 | f) 6 |
| g) 5 | h) 2 | |

B 21

8,80 kroner

B 22 $3 + 3 = 6$ **B 23**

- | | | |
|-------|-------|-------|
| a) 5 | b) 9 | c) 6 |
| d) 17 | e) 21 | f) 29 |
| g) 20 | h) 19 | i) 41 |
| j) 42 | k) 2 | l) 4 |
| m) 0 | n) 16 | o) 6 |

B 24

- | | | |
|----------|-----------|--------|
| a) 356 | b) 239 | c) 100 |
| d) 5 264 | e) 704 | f) 670 |
| g) 7 071 | h) 54 106 | |

B 25

- | | | |
|-----------|-----------|-----------|
| a) 22 | b) 222 | c) 3 651 |
| d) 711 | e) 775 | f) 83 063 |
| g) 25 257 | h) 23 208 | |

B 26

- a) 36 b) 669 c) 168 d) 28 990

B 27

- a) 732 b) 19 712 c) 8 255 d) 75 848

B 28

- a) 21 b) 7 c) 81 d) 82
e) 91 f) 51

B 29

- a) 2 340 b) 1 281 c) 4 175

B 30

- a) 37 b) 36 c) 39 d) 453

B 31

- a) 4 : 2 b) 36 : 6 c) 16 : 4 d) 1 : 1
e) 9 : 3 f) 49 : 7 g) 64 : 8 h) 81 : 9
i) 100 : 10

B 32

- a) 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30
b) Partall er hele tall, som er delelige med 2. Partall slutter på 0, 2, 4, 6, 8./
Partal er heile tal, som er delelege med 2. Partall sluttar på 0, 2, 4, 6, 8.
c) $4 + 8 = 12$ $12 + 14 = 26$ $60 + 62 = 122$

B 33

- a) ja b) partall/partal c) oddetall/oddetal
d) partall/partal e) oddetall/oddetal

B 34

- a) 83, Oddetall/Oddetal b) 1405, Oddetall/Oddetal
c) 2, Partall/Partal d) 24, Partall/Partal
e) 21, Oddetall/Oddetal f) 25, Oddetall/Oddetal

B 35

- 29, 31, 59, 61

B 36

a) $12 = 3 \cdot 2 \cdot 2$

b) Riktig/Rett

c) $42 = 7 \cdot 3 \cdot 2$

d) Riktig/Rett

B 37

a) $9 = 3 \cdot 3$

b) $22 = 11 \cdot 2$

c) $36 = 3 \cdot 3 \cdot 2 \cdot 2$

d) $14 = 7 \cdot 2$

e) $56 = 7 \cdot 2 \cdot 2 \cdot 2$

f) $72 = 3 \cdot 3 \cdot 2 \cdot 2 \cdot 2$

g) $81 = 3 \cdot 3 \cdot 3 \cdot 3$

h) $105 = 7 \cdot 5 \cdot 3$

i) $125 = 5 \cdot 5 \cdot 5$

j) $48 = 3 \cdot 2 \cdot 2 \cdot 2 \cdot 2$

k) $162 = 3 \cdot 3 \cdot 3 \cdot 3 \cdot 2$

l) $500 = 5 \cdot 5 \cdot 5 \cdot 2 \cdot 2$

B 38

a) 6,7

b) 19,8

c) 8,97

d) 4,67

e) 72,4

f) 12,12

B 39

a) 6,3

b) 10,44

c) 0,78

d) 6,599

e) 15,07

f) 0,2172

B 40

a) 0,3

b) 1,4

c) 11,1

d) 116,1

e) 1,605

f) 0,852

g) 0,0968

h) 2,368

B 41

a) 9,36

b) 679,9

c) 9,36

d) 515,6

B 42

448 kroner

B 43

523,20 kroner

B 44

14,8 kg

B 45

843 kroner

B 46

41 700 kroner

B 47

1 073 km

B 48

1 906,50 kroner

B 49

15 503 kroner

B 50

- a) 6,4 b) 2,3 c) 5,03 d) 4,02
e) 25,15 f) 5,162

B 51

- a) 4 b) 3 c) 3 d) 30

B 52

- a) 5,67 b) 6,29 c) 7,44 d) 1,63

B 53

- a) 2 °C b) 0 °C c) -10 °C d) -15 °C

B 54

- a) -4 °C b) 0 °C c) 20 °C d) 27 °C

B 55

22 °C

B 56

-200 kroner

B 57

240 kroner

B 58

56 år gammel/56 år gammel

B 59

- a) 25 år gammel/25 år gammel b) 77 år gammel/77 år gammel

B 60

1 619 meter

B 61

- a) $6 > 4$ b) $5 < 12$ c) $121 > 0$
d) $3 < 7$ e) $223 < 232$ f) $19 > 18,59$

B 62

- a) $2 > -3$ b) $-6 < -3$ c) $-8 < 2$
d) $-4 > -23$ e) $-3 < -1$ f) $-8 < 0$
g) $-6 > -8$ h) $-1,3 < -1,29$ i) $-0,9 > -0,96$

B 63

- a) $A = 12, B = 5, C = -12, D = -7, E = -1$
b) $A = -30, B = -140, C = -220, D = 20, E = -90$
c) $A = -550, B = -400, C = -750, D = -950, E = -300$

B 64

- a) $A = -0,1, B = -0,9, C = 0,1, D = -1,1, E = -0,6$
b) $A = -0,5, B = 0,75, C = -1,25, D = -2,25, E = -1,75$
c) $A = -0,05, B = 0,01, C = -0,11, D = -0,09, E = -0,02$

B 65

- a) 19 b) 1 c) 2 d) 2
e) -2 f) 7 g) 0 h) 7

B 66

- a) 103 b) 40 c) 17 d) -46
e) 271 f) -2 g) -210 h) 14

B 68

- a) -2 b) -4 c) -5 d) -5
e) -3 f) -5

B 69

- a) 2 b) 1 c) 0 d) -1
e) -2 f) -7

B 71

- a) -7 b) -10 c) -7 d) -15
e) -2 f) -10

B 72

- a) -13 b) -39 c) -60 d) -170
e) -405 f) -11 151

B 73

- a) -5 b) -6 c) 1 d) -9
e) -8 f) -4 g) -15 h) 3

B 74

- a) 1 b) 4 c) 0 d) -2
e) 0 f) 2

B 75

- a) 18 b) -2 c) -10 d) -60
e) 230 f) -204

B 76

- a) 4 b) -4 c) -8 d) -9
e) 18 f) -3

B 77

- a) 8 b) 8 c) 16 d) 9
e) 25 f) 2

B 78

- a) 4 b) 5 c) 13 d) -5
e) -15 f) -1

B 79

- a) 6 b) 13 c) 12 d) 1
e) 0 f) -4 g) -2 h) -8
i) 2

B 80

- a) 5 b) -1 c) 0 d) -3
e) 17 f) -11

B 81

- a) 5 b) 2 c) -2 d) -1
e) -1 f) -16

B 82

- a) 1 b) 3 c) 0 d) 11

B 83

- a) 30 b) -30 c) -30 d) 30
e) -28 f) 42 g) -64 h) -56

B 84

- a) -42 b) -54 c) 48 d) -81
e) -28 f) -36 g) 39 h) -60

B 85

- a) 4 b) -4 c) -4 d) -2
e) 2 f) 2 g) -1 h) -10

B 86

- a) 5 b) 2 c) -6 d) 6
e) -9 f) -4 g) 3 h) -7

BLÅ

B 88

241 stup

B 89

315 kroner

B 90

53 fyrstikker

B 91

57 kroner

B 92

44 - 37

B 93

3 950 kroner

B 94

- a) 673 frimerker/
673 frimerke b) 127 frimerker/
127 frimerke

B 98

- a) $50 + 30 = 80$ (79) b) $20 + 10 = 30$ (31) c) $50 + 30 = 80$ (81)

B 99

- a) $60 + 30 = 90$ (91) b) $40 + 30 = 70$ (72)
c) $10 + 40 + 10 = 60$ (60) d) $140 + 40 + 20 = 200$ (199)

B 100

- a) $90 - 50 = 40$ (41) b) $40 - 20 = 20$ (19) c) $70 - 20 = 50$ (49)

B 101

c) 180 kroner

B 102

c) 120 kroner

B 104

- a) 36 b) 85 c) 161 d) 216
e) 348 f) 384

B 105

- a) 156 b) 555 c) 1 134 d) 1 311
e) 1 560 f) 2 632

B 106	a) 9 425	b) 13 272	c) 5 700
B 107	408 kroner	B 108	1 462 kroner
B 109	2 616 flasker	B 110	7 257 kroner
B 111	1,1 1,2 1,3 1,4 1,5 1,6 1,7 1,8 1,9 1,95		
B 112	10,1 10,2 10,3 10,4 10,5 10,6 10,7 10,8 10,9 10,95		
B 113	a) 1,31 1,32 1,33 1,34 1,35	b) se a)	
B 114	a) Hun må gå en vei/ Ho må gå ein veg	b) Hun kjøpte ikke is/ Ho kjøpte ikkje is	
B 115	28,90 kroner	B 116	16,50 kroner
B 117	a) 50 kroner	b) 75 kroner	c) 125 kroner d) 150 kroner
B 118	a) 10 kroner	b) 20 kroner	c) 25 kroner d) 40 kroner
B 119	a) 15 °C	b) -15 °C	c) 30 °C
B 120	a) 21 °C	b) 14 °C	c) 13 °C d) 7 °C
	e) 5 °C		
B 121	a) Aten 15 °C	b) Moskva -12 °C	c) 27 °C
B 122	a) 12 °C	b) 19 °C	
B 123	a) 22 °C	b) 11 °C	
B 124	a) 2 °C	b) 0 °C	c) -1 °C

B 125

a) $-2\text{ }^{\circ}\text{C}$

b) $2\text{ }^{\circ}\text{C}$

c) $9\text{ }^{\circ}\text{C}$

B 126

a) $-4\text{ }^{\circ}\text{C}$

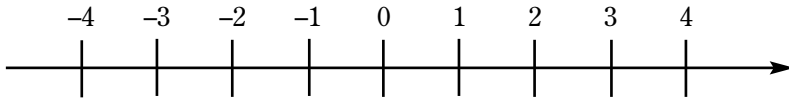
b) $-15\text{ }^{\circ}\text{C}$

c) $5\text{ }^{\circ}\text{C}$

d) $-36\text{ }^{\circ}\text{C}$

B 127

$23\text{ }^{\circ}\text{C}$

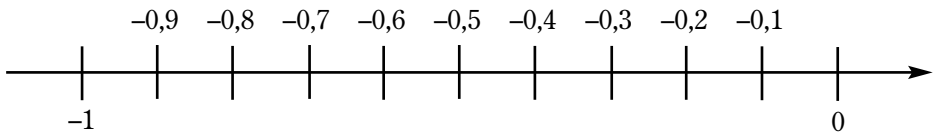
B 128**B 129**

a) $A = 6, B = 3, C = 0, D = -3, E = -7$

b) $A = 1, B = -1, C = -3, D = -5, E = -7$

c) $A = 20, B = -20, C = -60, D = -90, E = -120$

d) $A = 100, B = -200, C = -400, D = -800, E = -1100$

B 130**B 131**

a) $A = -0,1, B = -0,4, C = -0,8, D = -1,1, E = -1,4$

b) $A = 0,5, B = -0,5, C = -3,0, D = -4,5, E = -6,0$

B 132

a) $6 > 3$

b) $4 < 8$

c) $5 < 9$

d) $7 > 2$

e) $13 < 52$

f) $0 < 1$

g) $6 > 5$

h) $17 < 98$

B 133

a) $-3 > -5$

b) $-6 < -2$

c) $-15 < -1$

d) $-2 > -20$

e) $-17 < 0$

f) $-8 > -13$

g) $-2 < -1$

h) $-1,3 > -29$

B 134

a) $4 > -5$

b) $-6 < 7$

c) $-5 < 2$

d) $-1 > -9$

e) $3 > -24$

f) $-36 < 4$

g) $-4 < 9$

h) $-14 < 0$

B 135

- a) 2 b) 0 c) -2 d) -1
e) 1 f) -5 g) -4 h) -6

B 136

- a) 4 b) 1 c) 5 d) 0
e) 2 f) -2 g) -9 h) -10

B 137

- a) -2 b) 3 c) -4 d) 4
e) -3 f) -1 g) -10 h) -3

B 138

- a) -9 b) -2 c) -7 d) -9
e) -1 f) -7 g) -7 h) -17

B 141

år -44

B 142

19 870 meter

B 143

280 °C

B 144

- a) -25 b) -6 c) -28 d) -10
e) -24 f) -35 g) -18 h) -16

B 145

- a) 9 b) 20 c) 36 d) 20
e) -40 f) -27 g) -45 h) 60

B 146

- a) 2 b) 5 c) 5 d) 2

B 147

- a) -2 b) -5 c) -5 d) -2

B 148

- a) -2 b) -5 c) -5 d) -2

B 149

- a) 2 b) 5 c) 5 d) 2

B 150

- a) 3 b) -5 c) 3 d) -2
e) -2 f) 1 g) -3 h) -4

B 151

- a) -2 b) -2 c) 2 d) -30
e) 8 f) -3 g) 5 h) -7

B 154

- a) 5 b) 0 c) -1 d) -6

GUL

B 156

- b) 30 kroner

B 157

- c) 350 kroner

B 158

- a) 0,9

B 159

For eksempel:

- a) 2,65 b) 0,805 c) 6,125 d) 7,05
e) 5,3405 f) 0,6615

B 160

- a) 3,6 b) 8,02 c) 5,85 d) 32,65
e) 36,68 f) 4,135

B 161

- a) 7,52 kg b) 15,72 kg c) 4,28 kg

B 162

- a) 1,70 kroner b) 4,00 kroner

B 163

44,10 kroner

B 164

417,96 \approx 418 kroner

B 165

59,85 \approx 60 kroner

B 166

31,72 \approx 31,50 kroner

B 167

130,70 \approx 130,50 kroner

B 168	a) 12	b) 14	c) 11	d) 19
	e) 17	f) 120	g) 65	h) 158
	i) 132	j) 17	k) 12	l) 14
B 169	140 kroner	B 170	145 kroner	
B 171	a) 32	b) 62	c) 32	d) 56
	e) 98	f) 205	g) 108	h) 103
B 172	150 kroner	B 173	1,30 per egg, 6,50 kroner for 5 egg	
B 174	a) 1,3	b) 2,6	c) 3,6	d) 6,4
	e) 4,2	f) 4,8	g) 3,8	h) 2,2
B 175	a) 19,20 kroner	b) 88 kroner	c) 140 kroner	
B 176	a) 43,75 gram	b) 44,98 kroner	c) 5,62 kroner	
B 177	32 uker/32 veker	B 178	68 skudd/68 skot	
B 179	a)	Epler/Eple	12,25 kroner	
		Bananer	11,16 kroner	
		<u>Sum</u>	<u>23,41 kroner</u>	
	b) 156 gram	c) 172 gram		
B 180	a) 20,7 gram	b) 2,1 dl	c) 3,42 kroner	
B 181	a) 0,54 kroner	b) 14,7 gram		
B 182	6 850 medlemmer			

B 183

- a) 20,58 b) 644 c) 77 562 d) 2 271
e) 0,2277 f) 374,245

B 184

- a) 90,42 kroner b) 9,50 kroner

B 185

- a) 4,25 b) 7,22 c) 7,88 d) 4,22
e) 4,06 f) 5

B 186

- a) 357 kroner b) 143 kroner

B 187

- a) 59,52 kroner b) 40,50 kroner

B 188

20,93 kroner

B 189

8,09 kroner per kg

B 190

- a) 5,77 millioner kroner per km/5,77 millionar kroner per km
b) 5 770 kroner per meter

B 191

1046,50 kroner

B 192

En kan for eksempel kjøpe boblejakke, bukse, skjorte, og strømper.
Det blir totalt 492,90 kroner./Ein kan til dømes kjøpe boblejakke, bukse,
skjorte, og strømper. Det blir totalt 492,90 kroner.

B 193

Forslag:

- 1 Hvor mange timer tok det før Titanic sank? 2 timer og 35 minutter/
Kor mange timer tok det før Titanic sank? 2 timar og 35 minutt.
- 2 Hvor mange overlevde forliset? 711 passasjerer/
Kor mange overlevde forliset? 711 passasjarar
- 3 Hvor mange km/t er det i én knop? 1,86 km/t = 1 knop/
Kor mange km/t er det i éin knop? 1,86 km/t = 1 knop
- 4 Bruk svaret i c) til å finne ut hvor mange km/t 15 knop er. 27,9 km/t./
Bruk svaret i c) til å finne ut kor mange km/t 15 knop er. 27,9 km/t

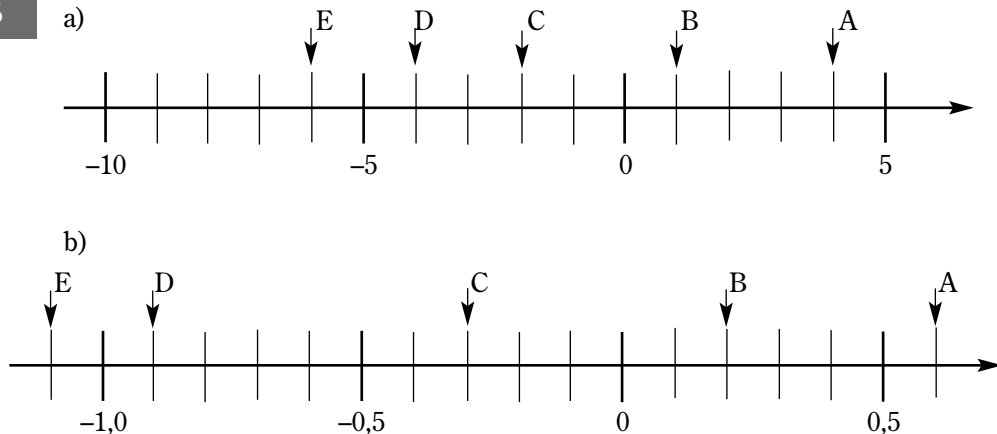
B 194

Forslag:

- 1 Hvor mange ganger rekker et foreldrepar å komme med mat i løpet av en time? 62,5 ganger i timen./Kor mange gonger rekker eit foreldrepar å komme med mat i løpet av ein time? 62,5 ganger i timen.
- 2 Hvor mange kjøttmeiser må overleve sin første vinter for at 4 skal bli 10 år gamle? 4 000 kjøttmeiser må overleve første vinteren./Kor mange kjøttmeisar må overleve sin første vinter for at 4 skal bli 10 år gamle? 4 000 kjøttmeisar må overleve første vinteren.
- 3 Gjør et overslag over hvor mye et kjøttmeispar veier. 12 – 40 gram/
Gjer eit overslag over kor mykje eit kjøttmeispar veg. 12 – 40 gram.
- 4 Dersom 2000 kjøttmeiser overlever klekkingen i en skog. Hvor mange kommer til å overleve sommeren? 1000 kjøttmeiser/Dersom 2000 kjøttmeisar overlev klekkinga i ein skog, kor mange kjem til å overleve sommaren? 1000 kjøttmeisar

B 195

- a) $A = 6, B = 1, C = -2, D = -6, E = -9$
- b) $A = 150, B = -50, C = -250, D = -400, E = -500$
- c) $A = -575, B = -675, C = -775, D = -875, E = -925$
- d) $A = 0,1, B = -0,6, C = -1,3, D = -1,9, E = -2,5$

B 196**B 197**

- a) $2\text{ }^{\circ}\text{C}$
- b) $-3\text{ }^{\circ}\text{C}$
- c) $-9\text{ }^{\circ}\text{C}$

B 198

- a) $-3\text{ }^{\circ}\text{C}$
- b) $0\text{ }^{\circ}\text{C}$
- c) $13\text{ }^{\circ}\text{C}$

B 199

- a) $0,7\text{ }^{\circ}\text{C}$ b) $-3,1\text{ }^{\circ}\text{C}$ c) $5,8\text{ }^{\circ}\text{C}$ d) $-15,2\text{ }^{\circ}\text{C}$

B 200

646 år

B 201

år 296 f. Kr.

B 200

- a) Han ble født år 1368 f. Kr. b) 3 273 år

B 203

- a) Maraton blir husket i dag fordi distansen som soldaten løp, er den samme som dagens løpere må tilbakelegge når de gjennomfører et maratonløp.
- b) Denne avstanden er lengden fra Maratonsletta til Aten./Denne avstanden er lengda frå Maratonsletta til Aten.
- c) Slaget stod for 2 497 år siden (2007)./Slaget stod for 2 497 år sidan (2007).

B 204

- a) -56 b) -48 c) -49 d) -54
- e) 56 f) 36 g) -72 h) 52

B 205

- a) -5 b) 9 c) -8 d) 9
- e) 3 f) 23 g) -3 h) 8,5

B 206

- a) 5 b) -13 c) -4 d) 0

B 207

- a) 7 b) 2 c) 0 d) 30

B 208

- a) $4 \cdot (-7) = -28$ b) $-6 \cdot (-2) = 12$
- c) $-9 \cdot 7 = -63$ d) $\frac{-63}{-3} = 21$
- e) $\frac{-14}{2} = -7$ f) $2 \cdot 2 \cdot (-3) = -12$
- g) $\frac{10}{-2} + (-2) = -7$ h) $\frac{-8}{-2} - 1 = 3$

B 209

- a) 2 b) -4 c) -7

B 222

6,72 kroner

B 223105,7 m³**B 224**

- a) 7 650 000 kg b) 7 650 tonn c) 1 177 lastebiler/
lastebilar
- d) 127,5 kg per jeger e) 1,7 kg per innbygger/innbyggjar

B 225

- a) 375,72 kroner b) 17,35 kr pr. kg c) 51 (50,1) beger
- d) 10,41 kroner per kg

B 226

- a) 65 øre b) 315 250 kroner c) 3,65 kroner per skinn

B 227

- a) 959 000 kroner b) 831 500 kroner
- c) 6 995 kr per m² for A, og 7 749 kr per m² for B
- d) Bolig A var billigere enn bolig B per m², fordi bolig A er større enn bolig B./
Bolig A var billigere enn bustad B per m², fordi bustad A er større enn bustad B.

B 228

2 050 dm

B 229

- a) 4,54 kroner b) 1,76 kroner

B 230

- a) Hvor stor var hver av vannkannene de benyttet i båten? 20 l/
Kor stor var kvar av vannkannene dei brukte i båten? 20 l
- b) Benytt hastigheten flåten hadde den dagen den hadde en distanserekord
til å finne ut hvor langt de ville nå på en uke med den hastigheten. 910 km
eller 497 sjømil./Bruk farten flåten hadde den dagen den hadde ein
distanserekord til å finne ut kor langt dei ville nå på ei veke med den
farten. 910 km eller 497 sjømil.
- c) De har brukt 140 liter vann den første uka. Hvor mye vann har de igjen?/
Dei har brukt 140 liter vatn den første uka. Kor mykje vatn har dei att?
- d) Neste dag brukte de 25 liter vann. Hvor mye har de benyttet totalt så langt?/
Neste dag brukte dei 25 liter vatn. Kor mykje har dei brukt totalt så langt?

B 231

- a) Hvor mye veier normalt en blåhvalunge etter 2 døgn? 2 200 kg./
Kor mykje veg normalt ein blåkvalunge etter 2 døgn? 2 200 kg.
- b) Hvor mye veier den etter en måned(30 dager)? 5 tonn/Kor mykje veg han
etter ein måned(30 dagar)? 5 tonn
- c) Hvor mye har hvalungen gått opp i vekt siden den ble født?/Kor mykje har
kvalungen gått opp i vekt sidan han blei fødd?
- d) Hvor mange ganger tyngre er en stor voksen blåhval enn en 7 måneder
gammel blåhvalunge?/Kor mange gonger tyngre er ein stor vaksen
blåkval enn ein 7 månader gammal blåkvalunge?

B 232

- a) 4,2 b) 30,1 c) 6 297,6 d) 25 080
- e) 2 407,4 f) 1 014

B 233

- a) 1 090 b) 1 490 c) 4 d) 60
- e) 29 f) 2 942

B 234

- a) 5 654 b) 31 c) 682 d) 49
- e) 38 f) 616

B 235

730,50 kroner

B 236

- a) 32,39 kroner b) 6,33 kg

B 237

Det kan være vanskelig å se direkte om dette tallet blir for stort eller for lite. Det ene tallet reduseres med 2, mens det andre tallet økes med 4. Det er grunn til å tro at siden hun øker det ene tallet mer enn hun reduserer det andre, vil utregningen hennes vise et tall som er litt for stort. Dette er ikke en regel./Det kan vere vanskeleg å sjå direkte om dette talet blir for stort eller for lite. Det eine talet minkar med 2, medan det andre tallet aukar med 4. Det kan vere grunn til å tru at sidan ho aukar det eine talet meir enn ho minkar det andre, vil utrekninga hennar vise eit tal som er litt for stort. Dette er ikkje ein regel.

B 238

41,35 kr per kg

B 239

Se B237. Det er grunn til å tro at siden han øker det ene tallet mer enn han reduserer det andre vil utregningen vise et tall som er litt for stort./
Sjå B237. Det er grunn til å tru at sidan han aukar det eine talet meir enn han minkar det andre vil utrekninga vise eit tal som er litt for stort.

B 240

Varene koster i underkant av 140 kroner; 135,98 kroner./
Varane kostar i underkant av 140 kroner; 135,98 kroner.

B 241

a) 62 b) 242 c) 380 d) 140

B 242

270,71 kroner

B 243

a) 77 760 b) 28 382 400

B 244

a) 7,13 fotballbaner/
7,13 fotballbanar b) 30 039 meter c) 6 066,7 tonn

B 245

a) 5 767 liter b) 19 223 glass/
19 223 glas c) 53 mennesker/
53 menneske

B 246

a) 27 280 tonn b) 33,55 millioner/
33,55 millionar c) 478 sviller per dag

B 247

a) 550 meter b) 3 019 meter

B 248

a) Aristoteles ble født i år 384 f.Kr., og døde 322 f.Kr./
Aristoteles vart fødd i år 384 f.Kr., og døydd 322 f.Kr.

b) Platon ble født i år 427 f.kr., og døde 347 f.kr./
Platon vart fødd i år 427 f.kr., og døydd 347 f.kr.

B 249

a) Cæsar ble født i år 100 f.Kr., og ble 56 år gammel./
Cæsar vart fødd i år 100 f.Kr., og blei 56 år gamal.

b) Kleopatra ble født i år 69 f.Kr., og døde 66 år gammel./
Kleopatra vart fødd i år 69 f.Kr., og døydd 66 år gammal.

B 250

- a) -104 b) 136 c) 3,92 d) -1,862
 e) -85,05 f) 1,4848

B 251

- a) 9 b) -8,5 c) -8,6 d) -8,6
 e) -62,25 f) 8,56 g) -6,5 h) 0,6372

B 252

- a) -7 b) 2 c) -11,7 d) -0,2

B 253

- a) 1 b) -10,5 c) -2,2 d) 2,2
 e) -29,2 f) 29,1

B 254

- a) -2 b) -35,28 c) -41,83

B 255

- a) 2,7 b) 13 c) 1

B 256

a)

-	-2	3	7	-4	9	
2	4	-1	-5	6	-7	
-3	-1	-6	-10	1	-12	
-7	-5	-10	-14	-3	-16	
12	14	9	5	16	3	
-15	-13	-18	-22	-11	-24	
Sum	-3	-23	-39	5	-47	-107
Samlet sum/Samla sum						

b)

4	-1	-5	6	-7	
-1	-6	-10	1	-12	
-5	-10	-14	-3	-16	
14	9	5	16	3	
-13	-18	-22	-11	-24	
-1	-26	-46	9	-56	-120
Samlet sum/Samla sum					

B 257

8	-2	-3	7	0	-2
-7	-13	②	⑥	①	⑤
⑤	③	①	⑤	④	-1

a)

	Antall kamper/ Talet på kampar	Vunnet kamp/ Vunne kampar	Uavgjort kamp Uavgjorde kampar	Tapt kamp	Målforskjell/ Mål- skilnad	Poeng	Plassering
Larvik	4	1	3	0	4	5	3
Sjetne	4	0	2	2	-5	2	5
Lunner	4	4	0	0	5	8	1
Gjerpen	4	0	2	2	-3	2	4
Fåberg	4	2	1	1	8	5	2
Tertnes	4	1	0	3	-9	2	6

b) Larvik har 3 uavgjorte kamper. En av dem *må* ha vært mot Sjetne. Dermed ble resultatet 17-17. /Larvik har 3 uavgjorde kampar. Ein *må* ha vore mot Sjetne. Da må resultatet vere 17-17.

c) Slutt Tabellen:

	Antall kamper/ Talet på kampar	Vunnet kamp/ Vunne kampar	Uavgjort kamp Uavgjorde kampar	Tapt kamp	Målforskjell/ Mål- skilnad	Poeng	Plassering
Larvik	5	1	3	1	3	5	3
Sjetne	5	1	2	2	1	4	4
Lunner	5	5	0	0	6	10	1
Gjerpen	5	0	2	3	-6	3	6
Fåberg	5	2	1	2	2	6	2
Tertnes	5	2	0	3	-6	4	5

a) Hvor gammel ble Nebukadnesar? 68 år/
Kvor gammel vart Nebukadnesar? 68 år0

b) Hvor gammel var han da hæren hans slo egypterne? 44 år/
Kor gammel var han da hæren hans slo egyptarane? 44 år

PRØV DEG SELV/PRØV DEG SJØLV

PB 1

- a) 447 b) 3 385 c) 111 d) 835

PB 2

- a) 18,17 b) 6,24 c) 1,37 d) 18,918

PB 3

- a) 39 b) 1,1

PB 4

- a) 5,63 b) 1,86

PB 5

- | | |
|---|---|
| a) Partall/Partal | b) oddetall/oddetal |
| c) printall og oddetall/
printal og oddetal | d) printall og oddetall/
printal og oddetal |
| e) partall/partal | f) printall og oddetall/
printall og oddetal |
| g) printall og oddetall/
printall og oddetal | h) oddetall/oddetal |

PB 6

- a) 12,53 kroner b) 12,50 kroner

PB 7

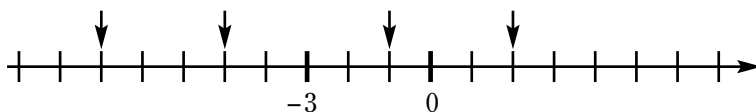
65 kroner

PB 8

19 lass

PB 9

- a) $A \approx -8$ $B = -5$ $C = -1$ $D = 2$



- b) $A = -375$, $B = -300$, $C = -150$, $D = -25$, $E = 50$, $F = 175$

PB 10

146,6 °C

PB 11

- a) 1172 år b) 2672 år

PB 12

- | | | | |
|-------|--------|--------|---------|
| a) 56 | b) -72 | c) -42 | d) 132 |
| e) -6 | f) -21 | g) 8 | h) -6,5 |

FYLKESOPPGAVE ROGALAND/ FYLKESOPPGÅVE ROGALAND

FB 1

a) Stavanger

b) Bryne	8 618
Jørpeland	5 631
Kopervik	6 592
Sauda	4 258
Skudeneshavn	3 214
Åkrehamn	9 452
<u>Sum</u>	<u>37 765</u>

(Befolkning og areal i tettsteder
per 1.1.2006, Statistisk sentralbyrå)

c) 23348

FB 2

a) 70 000 kg

b) 1 077 personer/1 077 personar

FB 3

175 820 sardineskelokk

FB 4

a) $\approx 28,3$ g

b) USA, Storbritannia

c) ≈ 99 g

FB 5

597 m

FB 6

a) Billetter med redusert pris. Gis. bl.a. til pensjonister./Billetter med redusert pris. M.a. pensjonistar får dei.

b) Eksempel/Døme: A: 890 kr

FB 7

a) År 872

b) Harald Hårfagre skal i Hafrsfjord ha beseiret de siste motstanderne av sitt nye kongedømme i Norge. Slaget ble utkjempet mot de to småkongene Kjøtve og Haklang som trolig regjerte på Sør- og Sørvestlandet./Harald Hårfagre skal i Hafrsfjord ha sgra over dei siste motstandarane av det nye kongedømmet hans i Norge. Han slost mot dei to småkongane Kjøtve og Haklang som truleg regjerte på Sør- og Sørvestlandet.

FASIT TIL KAPITTEL C


C 2

- a) $\frac{1}{4}$ b) $\frac{2}{3}$ c) $\frac{6}{8}$ d) $\frac{14}{34}$
e) $\frac{1}{5}$ f) $\frac{1}{2}$ g) $\frac{1}{2}$ h) $\frac{9}{7}$

C 3



C 4

- a) 
- b) $\frac{1}{3} > \frac{1}{6}$

C 5

- a) $\frac{1}{5} < \frac{1}{3}$ b) $\frac{1}{7} > \frac{1}{9}$ c) $\frac{1}{8} < \frac{1}{2}$ d) $\frac{7}{12} > \frac{7}{15}$
e) $\frac{6}{17} > \frac{6}{34}$ f) $\frac{120}{7} > \frac{120}{14}$

C 6

- a) $\frac{1}{3} < \frac{2}{3}$

b)

Brøk	Teller/Teljar	Nevner/Nemnar
$\frac{1}{3}$	1	3
$\frac{2}{3}$	2	3

Nevnerne er like/Nemnarane er like

C 7

- a) $\frac{1}{6} < \frac{5}{6}$ b) $\frac{6}{17} > \frac{3}{17}$ c) $\frac{1}{2} < \frac{3}{2}$ d) $\frac{5}{9} > \frac{2}{9}$
e) $\frac{6}{13} > \frac{2}{17}$ f) $\frac{1}{17} < \frac{4}{17}$ g) $\frac{2}{3} > \frac{1}{3}$ h) $\frac{1}{5} < \frac{3}{4}$

- i) $\frac{1}{10} < \frac{1}{3}$ j) $\frac{5}{5} = 1$ k) $\frac{6}{6} = \frac{22}{22}$ l) $\frac{13}{12} > \frac{2}{2}$
m) $\frac{17}{1} = 17$ n) $\frac{1}{18} < \frac{1}{15}$ o) $\frac{15}{3} < 15$ p) $\frac{223}{11} > \frac{222}{11}$
q) $\frac{2}{3} < 1$ r) $\frac{10}{10} = \frac{1}{1}$

C 8

- a) $\frac{1}{6}$ b) $\frac{3}{6}$ c) $\frac{3}{6}$ d) $\frac{3}{6}$
e) b, c og d f) De er like store/Dei er like store

C 9

- a) $\frac{10}{15}$ b) $\frac{15}{35}$ c) $\frac{20}{45}$ d) $\frac{25}{30}$
e) $\frac{40}{50}$

C 10

- a) $\frac{21}{28}$ b) $\frac{28}{35}$ c) $\frac{14}{49}$ d) $\frac{21}{56}$
e) $\frac{42}{56}$

C 11

- a) $\frac{10}{15}$ b) $\frac{24}{42}$ c) $\frac{18}{30}$ d) $\frac{35}{75}$

C 12

- a) $\frac{4}{18}$ b) $\frac{6}{18}$ c) $\frac{15}{18}$ d) $\frac{9}{18}$

C 13

- a) $\frac{24}{32}$ b) $\frac{20}{32}$ c) $\frac{16}{32}$ d) $\frac{6}{32}$

C 14

- a) $\frac{21}{42}$ b) $\frac{18}{42}$ c) $\frac{28}{42}$ d) $\frac{35}{42}$

C 15

- a) $\frac{5}{9}$ b) Tone får 800 kr, og Arild får 1000 kr.

C 16

Pelle må bære ut 90 kasser og Salman må bære ut 80 kasser.
Da står det 70 kasser igjen til Nina./Pelle må bære ut 90 kassar og Snorre må bære ut 80 kasser. Da står det 70 kassar att til Nina.

C 17

Det var flest som fikk karakteren 4./Det var flest som fekk karakteren 4.

C 18

a) $\frac{5}{7} > \frac{3}{14}$

b) $\frac{3}{5} > \frac{1}{2}$

c) $\frac{6}{11} > \frac{5}{22}$

d) $\frac{3}{13} > \frac{2}{26}$

e) $\frac{1}{3} < \frac{2}{5}$

f) $\frac{3}{5} < \frac{5}{6}$

C 19

a) Dele på 2 både i teller og nevner.

b) Dele på 2 både i teller og nevner.

c) Dele på 4 både i teller og nevner.

C 20

a) $\frac{2}{4}$

b) $\frac{3}{4}$

c) $\frac{10}{20}$

d) $\frac{9}{15}$

e) $\frac{1}{2}$

f) $\frac{4}{18}$

g) $\frac{8}{24}$

h) $\frac{11}{30}$

C 21

a) $\frac{6}{10} = \frac{3}{5}$

b) $\frac{27}{36} = \frac{3}{4}$

c) $\frac{18}{45} = \frac{2}{5}$

d) $\frac{15}{50} = \frac{3}{10}$

e) $\frac{17}{34} = \frac{1}{2}$

f) $\frac{32}{72} = \frac{4}{9}$

C 22

a) $\frac{3}{4}$

b) $\frac{1}{2}$

c) $\frac{1}{6}$

d) $\frac{1}{3}$

e) $\frac{3}{5}$

f) $\frac{3}{5}$

g) $\frac{3}{4}$

h) $\frac{1}{4}$

C 24

a) $1 \frac{1}{3}$

b) $1 \frac{2}{5}$

c) $2 \frac{1}{5}$

d) $2 \frac{2}{3}$

e) $2 \frac{2}{9}$

f) $3 \frac{1}{7}$

g) $3 \frac{11}{13}$

h) $9 \frac{2}{7}$

C 25Ekspeditøren har rett. $\frac{7}{4} = 1 \frac{3}{4}$ **C 26**

a) $\frac{5}{4}$

b) $\frac{11}{4}$

c) $\frac{7}{2}$

d) $\frac{23}{4}$

e) $\frac{25}{3}$

f) $\frac{39}{5}$

g) $\frac{55}{3}$

h) $\frac{63}{5}$

C 27

a) 1,5

b) 2,25

c) 3,75

d) 6,4

e) 12,6

f) 2,21

g) 4,75

h) 4,37

i) 2,33

j) 2,06

C 28

$\frac{1}{3}$

C 29

a) $\frac{7}{10}$

b) $\frac{3}{10}$

C 30

a) $\frac{1}{4}$

b) $\frac{3}{4}$

C 31

a) $\frac{3}{10}$

b) $\frac{1}{4}$

c) $\frac{1}{3}$

d) $\frac{11}{64}$

C 32

Brøkform	Desimalform
$\frac{1}{4}$	$1 : 4 = 0,25$
$\frac{3}{4}$	$3 : 4 = 0,75$
$\frac{5}{4}$	$5 : 4 = 1,25$
$\frac{6}{4}$	$6 : 4 = 1,5$
$\frac{3}{2}$	$3 : 2 = 1,5$

C 33

a) 0,80

b) 0,43

c) 0,67

d) 1,60

e) 3,25

f) 0,25

g) 0,68

h) 0,13

i) 0,17

j) 3,40

C 34

a) 0,9

b) 0,7

c) 0,37

d) 6,1

e) 0,21

f) 1,53

g) 0,19

h) 3,471

i) 0,04

j) 0,13

k) 0,017

l) 0,025

C 35

a)

Brøkform	Desimalform
$\frac{3}{10}$	$3 : 10 = 0,3$
$\frac{42}{10}$	$42 : 10 = 4,2$
$\frac{361}{100}$	$361 : 100 = 3,61$
$\frac{2}{100}$	$2 : 100 = 0,02$

b) $\frac{2}{100}$, $\frac{3}{10}$, $\frac{361}{100}$, og $\frac{42}{10}$ **C 36**a) $0,57 < 0,63$ b) $0,38 < 0,47$ c) $0,55 > 0,53$ d) $1,6 < 1,75$ e) $4,5 > 4,2$ f) $0,44 < 0,55$ **C 37**a) $\frac{2}{7} < 1$ b) $\frac{3}{4} > 0,6$ c) $\frac{2}{3} < 0,8$ d) $\frac{1}{4} = 0,25$ e) $\frac{8}{16} < 0,55$ f) $0,7 > \frac{3}{5}$ g) $\frac{5}{9} < \frac{8}{11}$ h) $0,67 > \frac{2}{3}$ **C 38**

2,5 dl, 3,5 dl og 5 dl

C 39a) $\frac{3}{10}$ b) $\frac{7}{100}$ c) $\frac{21}{100}$ d) $\frac{8}{10}$ e) $\frac{24}{100}$ f) $\frac{32}{100}$ g) $\frac{1}{100}$ h) $\frac{93}{100}$ **C 40**

Brøk	Desimalform	Brøk med 100 som nevner/nemnar
$\frac{3}{20}$	$3 : 20 = 0,15$	$\frac{15}{100}$
$\frac{4}{25}$	$4 : 25 = 0,16$	$\frac{16}{100}$

C 41 a) 91 % b) 9 %

C 42 a) 88 % b) 12 %

C 43 a) 29 elever/29 elever b) 71 elever/71 elever

C 44 a) 10 elever/10 elever b) 40 elever/40 elever

C 45 249 elever/249 elever

C 46 a) 1 kr b) 2 kr c) 2 kr d) 4 kr
e) 30 kr

C 48 a) 10 kr b) 180 kg c) 175 kg d) 60 kr
e) 840 kr f) 2 kr g) 102,6 l h) 6,72 kr

C 49 a) 80 elever/
80 elever b) 672 elever/
672 elever c) 256 elever/
256 elever

C 50 a) 840 kr b) 280 kr c) 9 180 kr d) 267 kr
e) 1 360 kr f) 9,80 kr

C 51 a) 5 600 kr b) 6 000 kr

C 52 a) Sporten AS 1 614 kr
Sporteksperten AS 1 846 kr b) Det er billigst på Sporten AS/
Det er billigast på Sporten AS

BLÅ

C 54 a) $\frac{4}{7}$ b) $\frac{8}{5}$

C 55 a) $\frac{1}{6}$ b) $\frac{3}{5}$ c) $\frac{10}{7}$

C 56

a) $\frac{1}{4}$

b) $\frac{3}{4}$

C 57

a) $\frac{4}{7}$

b) $\frac{3}{7}$

C 58

a) $\frac{1}{2}$

b) $\frac{1}{4}$

c) $\frac{1}{3}$

d) $\frac{3}{8}$

e) $\frac{5}{8}$

f) $\frac{3}{6}$

C 61

a) $\frac{1}{10}$

b) $\frac{4}{10}$

c) $\frac{2}{10}$

d) $\frac{3}{10}$

e) $\frac{7}{10}$

C 63

a) 12 ruter

b) 8 ruter

c) $\frac{2}{24}$

C 65

A = $\frac{1}{4}$, B = $\frac{3}{4}$, C = $\frac{5}{4}$, D = $\frac{7}{4}$ og E = $\frac{9}{4}$

C 66

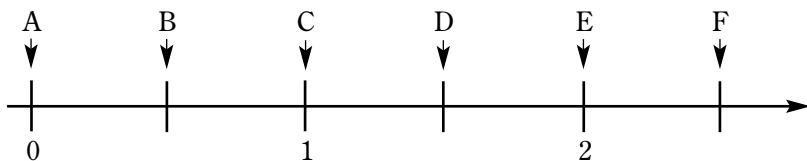
A = $\frac{1}{6}$, B = $\frac{5}{6}$, C = $\frac{6}{6}$, D = $\frac{10}{6}$ og E = $\frac{12}{6}$

C 67

A = $\frac{2}{5}$, B = $\frac{4}{5}$, C = $\frac{6}{5}$, D = $\frac{8}{5}$ og E = $\frac{9}{5}$

C 68

A = $\frac{2}{10}$, B = $\frac{8}{10}$, C = $\frac{14}{10}$, D = $\frac{20}{10}$ og E = $\frac{22}{10}$

C 69**C 70**

c, d, f og h

C 71

a) $\frac{1}{6} > \frac{1}{9}$

b) $\frac{1}{12} < \frac{1}{10}$

c) $\frac{1}{2} > \frac{1}{5}$

d) $\frac{7}{13} < \frac{7}{9}$

e) $\frac{5}{3} > \frac{5}{5}$

f) $\frac{58}{37} < \frac{58}{5}$

C 72Nei, $\frac{1}{3}$ er større enn $\frac{1}{4}$.**C 73**

- a) $\frac{5}{7} > \frac{1}{7}$ b) $\frac{15}{13} < \frac{18}{13}$ c) $\frac{1}{3} < \frac{2}{3}$ d) $\frac{5}{11} > \frac{3}{11}$
- e) $\frac{6}{15} < \frac{7}{15}$ f) $\frac{2}{7} > \frac{1}{7}$

C 74

- a) $\frac{1}{2}$ b) $\frac{3}{4}$ c) $\frac{1}{4}$ d) $\frac{5}{8}$

C 75

- a) $\frac{1}{3}, \frac{2}{6}, \frac{3}{9}$ og $\frac{4}{12}$ b) $\frac{9}{12} = \frac{6}{8} = \frac{3}{4}$
- c) $\frac{1}{3} > \frac{3}{10}$ d) $\frac{1}{2} < \frac{7}{12}$

C 76

- a) $\frac{1 \cdot 4}{4 \cdot 4} = \frac{4}{16}$ b) $\frac{1 \cdot 4}{3 \cdot 4} = \frac{4}{12}$
- c) $\frac{1 \cdot 4}{2 \cdot 4} = \frac{4}{8}$ d) $\frac{1 \cdot 4}{2 \cdot 4} = \frac{4}{8}$

C 77

- a) $\frac{3}{6}$ b) $\frac{9}{12}$ c) $\frac{12}{15}$ d) $\frac{15}{21}$
- e) $\frac{24}{27}$

C 78

- a) $\frac{12}{16}$ b) $\frac{20}{28}$ c) $\frac{32}{40}$ d) $\frac{40}{60}$
- e) $\frac{48}{48}$

C 79

- a) $\frac{2}{3} = \frac{6}{9}$ b) $\frac{3}{7} = \frac{9}{21}$ c) $\frac{3}{4} = \frac{9}{12}$ d) $\frac{4}{7} = \frac{16}{28}$
- e) $\frac{2}{5} = \frac{10}{25}$ f) $\frac{3}{5} = \frac{15}{25}$ g) $\frac{7}{11} = \frac{21}{33}$ h) $\frac{4}{9} = \frac{16}{36}$

C 80

- a) $\frac{18}{24}$ b) $\frac{16}{24}$ c) $\frac{4}{24}$ d) $\frac{14}{24}$
- e) $\frac{2}{24}$

C 81

a) $\frac{3}{5} > \frac{8}{15}$

b) $\frac{2}{3} = \frac{6}{9}$

c) $\frac{3}{4} < \frac{10}{12}$

d) $\frac{9}{20} > \frac{2}{5}$

e) $\frac{7}{18} > \frac{1}{3}$

f) $\frac{12}{16} = \frac{3}{4}$

g) $\frac{1}{6} = \frac{5}{30}$

h) $\frac{9}{8} > \frac{25}{24}$

i) $\frac{16}{4} < 5$

C 82

Brøkform	Desimalform
$\frac{1}{2}$	1 : 2 = 0,5
$\frac{3}{5}$	3 : 5 = 0,6
$\frac{3}{4}$	3 : 4 = 0,75
$\frac{4}{5}$	4 : 5 = 0,8
$\frac{3}{6}$	3 : 6 = 0,5
$\frac{6}{4}$	6 : 4 = 1,5

C 83

a) 0,7

b) 0,3

c) 1,3

d) 2,5

e) 0,07

f) 0,03

g) 0,035

h) 0,007

C 84

a) 0,9

b) 0,15

c) 3,2

d) 5,05

e) 2,672

f) 0,872

g) 0,045

h) 0,009

C 85

5 845 kr

C 86

2,50 kr

C 87

3,50 kr

C 88

a) $\frac{6}{7} < 1$

b) $\frac{4}{5} = 0,8$

c) $\frac{2}{5} < 0,5$

d) $0,6 > \frac{6}{12}$

e) $0,25 = \frac{1}{4}$

f) $\frac{3}{4} > \frac{14}{20}$

g) $1,5 = \frac{3}{2}$

h) $\frac{7}{3} > 2$

i) $\frac{1}{3} < 0,4$

C 89

a) $\frac{4}{10}$

b) $\frac{42}{10}$

c) $\frac{9}{10}$

d) $\frac{69}{10}$

e) $\frac{85}{100}$

f) $\frac{8}{100}$

g) $\frac{235}{100}$

h) $\frac{26}{100}$

C 90

a) $\frac{2}{3}$, forkorta med 2

b) $\frac{1}{2}$, forkorta med 4

C 91

$$\frac{6:6}{12:6} = \frac{1}{2}$$

C 92

a) $\frac{2}{3}$

b) $\frac{1}{2}$

c) $\frac{5}{6}$

d) $\frac{9}{10}$

e) $\frac{3}{4}$

f) $\frac{7}{8}$

g) $\frac{11}{12}$

h) $\frac{14}{15}$

C 93

a) $\frac{4}{10}$

b) $\frac{8}{20}$

c) $\frac{10}{25}$

d) $\frac{2}{5}$

C 94

a) $\frac{8}{10} = \frac{4}{5}$

b) $\frac{9}{12} = \frac{3}{4}$

c) $\frac{15}{25} = \frac{3}{5}$

d) $\frac{6}{36} = \frac{1}{6}$

e) $\frac{14}{21} = \frac{2}{3}$

f) $\frac{8}{12} = \frac{2}{3}$

C 95

a) $\frac{1}{2}$

b) $\frac{1}{3}$

c) $\frac{1}{3}$

d) $\frac{3}{4}$

C 96

a) $\frac{20}{40}$

b) $\frac{2}{6}$

c) $\frac{25}{21}$

C 97

a) $\frac{4}{3}, \frac{5}{4}, \frac{6}{5}$ og $\frac{7}{6}$

b) $1\frac{1}{3}, 1\frac{1}{4}, 1\frac{1}{5}$ og $1\frac{1}{6}$

C 98

a) $2 \frac{1}{2}$

b) $2 \frac{1}{5}$

c) $2 \frac{2}{3}$

d) $2 \frac{1}{3}$

e) $2 \frac{1}{4}$

f) $3 \frac{1}{5}$

g) 3

h) $3 \frac{1}{4}$

i) $3 \frac{3}{7}$

j) $9 \frac{1}{3}$

k) $5 \frac{2}{3}$

l) $5 \frac{3}{4}$

C 99

a) $\frac{7}{4}$

b) $\frac{6}{4}$

c) $\frac{11}{6}$

d) $\frac{8}{5}$

e) $\frac{13}{7}$

f) $\frac{9}{7}$

g) $\frac{11}{5}$

h) $\frac{11}{4}$

i) $\frac{20}{3}$

j) $\frac{27}{5}$

k) $\frac{27}{4}$

l) $\frac{32}{9}$

C 100

a) 1) $\frac{27}{30}$

2) $\frac{3}{30}$

b) 1) $\frac{55}{65}$

2) $\frac{10}{65}$

C 101

Brøkform	Desimalform	Prosentform
$\frac{7}{100}$	0,07	7 %
$\frac{18}{100}$	0,18	18 %
$\frac{50}{100}$	0,50	50 %
$\frac{85}{100}$	0,85	85 %
$\frac{1}{4}$	0,25	25 %
$\frac{1}{5}$	0,20	20 %
$\frac{60}{100}$	0,60	60 %
$\frac{150}{100}$	1,50	150 %

C 102

a) 26 %

b) 37 %

c) 62 %

C 103	a) 74 %, 63 % og 38 %	b) 100 % pr. oppgave		
C 104	a) 25 %	b) 50 %	c) 75 %	d) 100 %
	e) 20 %	f) 60 %	g) 25 %	h) 40 %
C 105	60 %	C 106	45 %	
C 107	65 %			
C 108	a) 95 %	b) 84 %	c) 100 %	d) 75 %
C 109	a) 5 kr	b) 8 tilskuere/ 8 tilskodarar	c) 1 kg	
C 110	a) 10 kr	b) 16 tilskuere/ 16 tilskodarar	c) 2 kg	
C 111	a) 5 kr	b) 20 kr	c) 30 kr	
C 112	a) 10 kr	b) 50 kr	c) 90 kr	
C 113	a) 10 elever/ 10 elevar	b) 20 %	c) 80 %	
C 114	a) 20 elever/ 20 elevar	b) 80 %	c) 20 %	
C 115	a) $\frac{5}{100}$	b) $\frac{18}{100}$	c) $\frac{12}{100}$	d) $\frac{1}{100}$
	e) $\frac{45}{100}$	f) $\frac{92}{100}$	g) $\frac{115}{100}$	h) $\frac{33}{100}$
C 116	a) 0,03	b) 0,06	c) 0,55	d) 0,98
	e) 1,05	f) 0,01	g) 3,15	h) 2,1

C 117	a) 39 elever/ 39 elever	b) 10 kr	c) 18 epler/ 18 eple	d) 34 kg
	e) 24 trær/24 tre	f) 40,50 kr		
C 119	a) 52	b) 208		
C 119	a) 175	b) 75		
C 120	a) 18	b) 42		
C 121	1 680 kr	C 122	15 kr	
C 123	376 kr	C 124	60 klinkekuler	
C 125	429 kr	C 126	2 592 kr	
C 127	1 265 kr	C 128	864 bøker	
C 129	1 914 tv-er/1 914 tv-ar	C 130	736 biler/736 bilar	
C 131	780 kr	C 132	90 trær/90 tre	
C 133	224 400 kr			
C 134	a) 9 kr		b) 81 kr	
C 135	391 kr			
C 136	a) 60 kr	b) 1 008 kr	c) 268 kr	

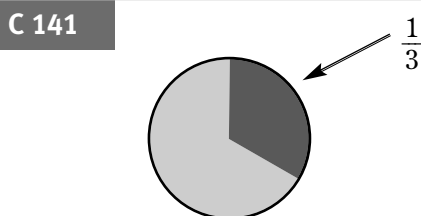
GUL

C 137 Se side 183/Sjå side 183

- C 138** a) $\frac{1}{6}$ b) $\frac{1}{2}$ c) $\frac{3}{2}$ d) $\frac{8}{3}$
e) $\frac{1}{3}$ f) $\frac{3}{2}$

- C 139** a) $\frac{1}{8}$ b)  c) $\frac{5}{8}$

- C 140** a) $\frac{1}{3}$ b) 550 kr



- C 142** $\frac{1}{20}, \frac{1}{9}, \frac{1}{8}, \frac{1}{6}, \frac{1}{3}, \frac{1}{2}$ og $\frac{1}{1}$

- C 143** a) $\frac{1}{6} < \frac{1}{5}$ b) $\frac{1}{3} > \frac{1}{16}$ c) $\frac{7}{16} > \frac{5}{16}$ d) $\frac{1}{18} < \frac{1}{17}$
e) $\frac{7}{3} < \frac{8}{3}$ f) $\frac{2}{2} = \frac{3}{3}$

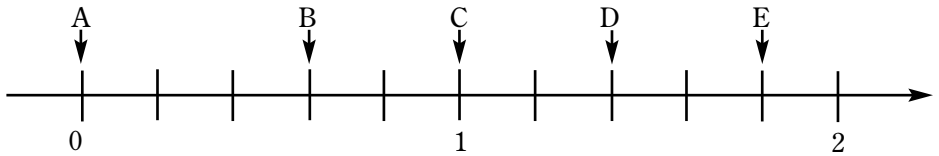
- C 145** $a > b = c$, fordi $\frac{3}{7} > \frac{3}{8} = \frac{3}{8}$

- C 146** Amir $\frac{4}{16}$, Irene $\frac{3}{16}$, Live $\frac{2}{16}$, Anders $\frac{4}{16}$ og Bjarne $\frac{3}{16}$

- C 147** $A = \frac{1}{4}, B = \frac{3}{4}, C = \frac{5}{4}, D = \frac{7}{4}$ og $E = \frac{9}{4}$

- C 148** $A = \frac{1}{6}, B = \frac{5}{6}, C = \frac{6}{6}, D = \frac{10}{6}$ og $E = \frac{12}{6}$

- C 149** $A = \frac{2}{5}, B = \frac{4}{5}, C = \frac{6}{5}, D = \frac{8}{5}$ og $E = \frac{9}{5}$

C 150**C 151**

a) $\frac{53}{82}$

b) $\frac{29}{82}$

C 152

a) $\frac{185}{260}$

b) $\frac{62}{260}$

c) $\frac{13}{260}$

C 153

En utvider en brøk ved å gange både teller og nevner med det samme tallet./
Ein vidar ut ein brøk ved å gange både teljar og nemnar med det same talet.

C 154

c) 2, 4 og 8

C 155

a) $\frac{2}{3}, \frac{4}{6}, \frac{6}{9}$ og $\frac{8}{12}$

b) $\frac{1}{2}, \frac{2}{4}, \frac{3}{6}, \frac{4}{8}, \frac{5}{10}$ og $\frac{6}{12}$

c) $\frac{2}{3} > \frac{5}{8}$

C 156

a) $\frac{3}{6}$

b) $\frac{9}{12}$

c) $\frac{24}{27}$

d) $\frac{36}{51}$

e) $\frac{54}{39}$

C 157

a) $\frac{3}{4} = \frac{18}{24}$

b) $\frac{3}{7} = \frac{24}{56}$

c) $\frac{7}{23} = \frac{21}{69}$

d) $\frac{8}{9} = \frac{72}{81}$

e) $\frac{21}{28} = \frac{42}{56}$

f) $\frac{13}{8} = \frac{91}{56}$

g) $\frac{7}{11} = \frac{84}{132}$

h) $\frac{15}{14} = \frac{120}{112}$

C 158

a) $\frac{20}{40}$

b) $\frac{10}{40}$

c) $\frac{15}{40}$

d) $\frac{44}{40}$

e) $\frac{104}{40}$

C 159

a) $\frac{40}{70}$

b) $\frac{40}{65}$

c) $\frac{40}{100}$

d) $\frac{40}{92}$

e) $\frac{40}{260}$

C 160

a) forkorta med 3

b) forkorta med 4

c) forkorta med 4

d) forkorta med 2

C 161

a) $\frac{6}{30}$

b) $\frac{3}{15}$

c) $\frac{2}{10}$

d) $\frac{1}{5}$

e) $\frac{4}{20}$

C 162

a) $\frac{15}{18} = \frac{5}{6}$

b) $\frac{30}{35} = \frac{6}{7}$

c) $\frac{21}{28} = \frac{3}{4}$

d) $\frac{20}{22} = \frac{10}{11}$

e) $\frac{56}{72} = \frac{7}{9}$

f) $\frac{49}{42} = \frac{7}{6}$

g) $\frac{81}{27} = \frac{9}{3}$

h) $\frac{32}{72} = \frac{4}{9}$

C 163

a) $\frac{1}{3}$

b) $\frac{1}{3}$

c) $\frac{9}{2}$

C 164

a) $\frac{2}{6}$

b) $\frac{28}{24}$

c) $\frac{30}{35}$

C 165

a) $\frac{4}{5} < \frac{7}{8}$

b) $\frac{3}{4} = \frac{18}{24}$

c) $\frac{13}{13} = \frac{47}{47}$

d) $\frac{5}{7} > \frac{2}{3}$

e) $\frac{5}{8} < \frac{3}{4}$

f) $\frac{18}{1} = 18$

g) $1 = \frac{24}{24}$

h) $\frac{7}{8} > \frac{20}{24}$

i) $\frac{13}{16} < \frac{44}{48}$

C 166

Brøkform	Desimalform
$\frac{2}{3}$	0,67
$\frac{3}{4}$	0,75
$\frac{1}{3}$	0,33
$\frac{3}{5}$	0,60
$\frac{7}{4}$	1,75
$\frac{7}{3}$	2,33

C 168

- a) 0,83 b) 0,67 c) 0,43 d) 0,56
e) 0,89 f) 0,62 g) 0,58

C 169

- a) $\frac{4}{5} > \frac{7}{9}$ b) $\frac{3}{4} < 0,8$ c) $\frac{2}{3} < 0,7$ d) $\frac{5}{9} < \frac{9}{13}$
e) $0,55 > \frac{8}{15}$ f) $0,7 > \frac{5}{8}$ g) $\frac{6}{6} = 1$ h) $\frac{2}{3} < 0,67$
i) $\frac{6}{11} > \frac{8}{15}$

C 170

- a) 0,63 b) 2,60 c) 0,44 d) 0,78
e) 2,29 f) 3,17 g) 0,45 h) 0,81

C 171

- a) $0,71 > 0,70$ b) $0,55 < 0,56$ c) $1,80 < 1,85$ d) $0,42 < 0,45$
e) $2,83 > 2,75$ f) $1,71 < 1,78$

C 172

- a) 0,3 b) 0,7 c) 0,9 d) 1,3
e) 2,3 f) 6,9 g) 0,82 h) 0,26

C 173

- a) $\frac{4}{10}$ b) $\frac{7}{10}$ c) $\frac{1}{10}$ d) $\frac{35}{100}$
e) $\frac{369}{100}$ f) $\frac{553}{1000}$ g) $\frac{334}{1000}$ h) $\frac{8}{1000}$

C 174

- a) En uekte brøk er en brøk der teller er større enn nevner for eksempel $\frac{3}{2}$.
b) Et blandet tall er et helt tall pluss en ekte brøk. Vi skriver for eksempel $1\frac{7}{10}$ som betyr $1 + \frac{7}{10}$.

C 175

- a) $\frac{5}{4}$ b) $\frac{11}{3}$ c) $\frac{35}{6}$ d) $\frac{35}{3}$

C 176

- a) $1\frac{2}{3}$ b) $1\frac{2}{5}$ c) $3\frac{1}{5}$ d) $5\frac{3}{4}$

C 180

- a) Det er det samme som å gange tallet med 5./
Det er det same som å gonge talet med 5.
b) Det er det samme som å dele tallet på 5./Det er det same som å dele talet på 5.
c) Tallet forblir uendret./Talet forblir uendra.

C 181	a) 6 mnd.	b) 8 mnd.	c) 9 mnd.	d) 10 mnd.
C 182	a) 30 min	b) 15 min	c) 45 min	d) 36 min
C 183	a) 9 timer/9 timar		b) 15 timer/15 timar	
C 184	a) 26 %	b) 37 %	c) 62 %	
C 185	a) 25 %	b) 32 %	c) 40 %	d) 37,5 %
C 186	a) 25 %	b) 75 %		
C 187	20 %		C 188	33,3 %
C 189	2,5 %		C 190	65 %
C 191	30 %			
C 192	a) 94 %	b) 83 %	c) 100 %	d) 72 %
C 193	a) 5 kr	b) 25 kr	c) 125 kr	d) 60 kr
	e) 6 kr	f) 2,50 kr		
C 194	a) 60 m	b) 35 kr	c) 120 træer/tre	d) 1,5 kg
	e) 1,92 m	f) 0,16 dl		

C 195

Brøkform	Desimalform	Prosentform
$\frac{1}{4}$	0,25	25 %
$\frac{1}{5}$	0,20	20 %
$\frac{3}{4}$	0,75	75 %
$\frac{4}{5}$	0,80	80 %
$\frac{9}{10}$	0,90	90 %
$\frac{43}{100}$	0,43	43 %
$\frac{115}{100}$	1,15	115 %

C 196

- a) $\frac{16}{100}$ b) $\frac{82}{100}$ c) $\frac{8}{100}$ d) $\frac{115}{100}$

C 197

- a) 0,13 b) 0,92 c) 0,07 d) 1,06

C 198

- a) $\frac{73}{100} = 0,73$ b) $\frac{28}{100} = 0,28$ c) $\frac{132}{100} = 1,32$ d) $\frac{4}{100} = 0,04$

C 199

- a) 78 elever/
elevar b) 10 kr c) 18 epler/
eple d) 36 lys
- e) 7 500 kr f) 375,30 kr g) 253 liter h) 168,75 tonn

C 200

- a) 39 b) 611

C 201

- a) 48 kr b) 30 kr c) 42 kr

C 202

- a) 21 b) 39

C 203

3 348 kr

C 204	a) 102	b) 48		
C 205	123		C 206	376 kr
C 207	429 kr			
C 208	a) 1 007 biler/ bilar	b) 731 biler/ bilar	d) 2 639 biler/ bilar	e) 4 049 biler/ bilar
C 209	a) 1 250 kWh	b) 5 500 kWh	d) 13 500 kWh	e) 1 000 kWh
C 210	6 148 kr		C 211	2 646 kr
C 212	a) 1 743 kr	b) 1 449 kr		
C 213	1 431 kr		C 214	3 036 filmer/filmar
C 215	3 445 kr			
C 216	a) 648 kr	b) 10 152 kr		
C 217	a) 2 173 kr	b) 1 517 kr	c) 7 995 kr	
C 218	33,3 %		C 219	20 %
C 220	18,75 %			
C 221	a) 31,2 kg	b) 88,8 kg		
C 222	2 977 kr		C 223	70 kr
C 224	a) 104 000 kr	b) 1 704 000 kr		

C 225

- a) 125 625 kr b) 1 549 375 kr

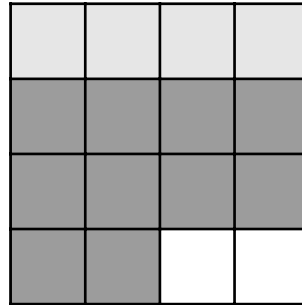
RØD/RAUD**C 226**

- a)
- $\frac{3}{12}$
- b)
- $\frac{7}{18}$
- c)
- $\frac{1}{2}$
- d)
- $\frac{3}{8}$

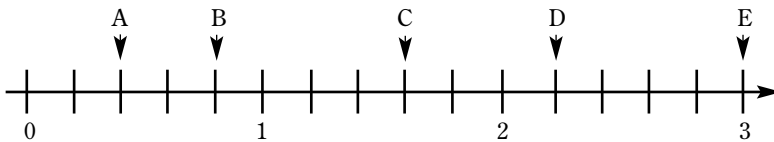
C 227

- a)
- $\frac{1}{16}$
-
- c)
- $\frac{1}{8}$

b)

**C 228**

- a)
- $\frac{21}{26}$
- b)
- $\frac{5}{26}$

C 229**C 230**

- a)
- $\frac{11}{38}$
- b)
- $\frac{27}{38}$

C 231

- a) 0,3 b) 0,031 c) 5,009

C 232

- a)
- $\frac{6}{10}$
- b)
- $\frac{1}{10}$
- c)
- $\frac{15}{100}$
- d)
- $\frac{9}{100}$
-
- e)
- $\frac{81}{100}$
- f)
- $\frac{32}{1000}$
- g)
- $\frac{245}{100}$
- h)
- $\frac{52}{1000}$
-
- i)
- $\frac{3}{1000}$
- j)
- $\frac{2038}{1000}$
- k)
- $\frac{52}{10000}$
- l)
- $\frac{32}{10}$

C 234

- a) 0,57 b) 0,55 c) 0,78 d) 0,89

C 235

- a)
- $\frac{4}{7} < \frac{5}{8}$
- b)
- $\frac{6}{11} < \frac{5}{9}$
- c)
- $0,63 < \frac{7}{11}$
- d)
- $\frac{9}{17} > \frac{22}{47}$
-
- e)
- $\frac{8}{13} < 0,72$
- f)
- $0,17 < \frac{2}{9}$

C 236

a) $\frac{15}{6} = \frac{75}{30}$

b) $\frac{3}{5} = \frac{33}{55}$

c) $\frac{6}{7} = \frac{72}{84}$

d) $\frac{4}{9} = \frac{52}{117}$

e) $\frac{14}{7} = \frac{238}{119}$

f) $\frac{19}{7} = \frac{152}{56}$

g) $\frac{81}{27} = \frac{9}{3}$

h) $\frac{32}{72} = \frac{4}{9}$

C 237

a) ca. $\frac{7}{9}$

b) ca. $\frac{5}{9}$

c) ca. $\frac{12}{18}$

d) ca. $\frac{6}{18}$

C 238

a) $\frac{56}{64}$

b) $\frac{106}{64}$

c) $\frac{176}{64}$

d) $\frac{92}{64}$

e) $\frac{144}{64}$

C 239

a) $\frac{36}{22}$

b) $\frac{36}{138}$

c) $\frac{36}{60}$

d) $\frac{36}{56}$

e) $\frac{36}{156}$

C 240

a) $\frac{6}{30}$

b) $\frac{3}{15}$

c) $\frac{2}{10}$

d) $\frac{1}{5}$

e) $\frac{4}{20}$

C 241

a) $\frac{10}{9}$

b) $\frac{30}{27}$

C 242

a) $\frac{30}{35} = \frac{6}{7}$

b) $\frac{42}{56} = \frac{3}{4}$

c) $\frac{68}{119} = \frac{4}{7}$

d) $\frac{120}{85} = \frac{24}{17}$

e) $\frac{78}{26} = \frac{3}{1}$

f) $\frac{42}{70} = \frac{3}{5}$

g) $\frac{152}{184} = \frac{19}{23}$

h) $\frac{56}{264} = \frac{7}{33}$

C 243

357 kan deles med 3

6 224 kan deles med 2 og 4

8 091 kan deles med 3 og 9

1 344 kan deles med 2, 3 og 4

3 951 kan deles med 3 og 9

2580 kan deles med 2, 3, 4 og 5

C 244

- a) $\frac{17}{26}$ b) $\frac{3}{17}$ c) $\frac{69}{37}$ d) $\frac{58}{67}$
- e) $\frac{318}{359}$

C 245

- a) $\frac{71}{8}$ b) $\frac{63}{5}$ c) $\frac{51}{16}$ d) $\frac{366}{23}$

C 246

- a) $1\frac{1}{224}$ b) $21\frac{3}{15}$ c) $11\frac{5}{9}$ d) $26\frac{6}{12}$

C 247

- a) 30 % b) 25 %

C 248

Brøkform	Desimalform	Prosentform
$\frac{3}{4}$	0,75	75 %
$\frac{1}{8}$	0,125	12,5 %
$\frac{1}{6}$	0,17	17 %
$\frac{67}{100}$	0,67	67 %
$\frac{87}{100}$	0,87	87 %
$\frac{125}{100}$	1,25	125 %

C 249

- a) 94 % b) 77 % c) 82 % d) 100 %

C 250

- a) 2,5 tonn b) 8 tilskuere/tilskodarar
c) 4,10 kr d) 29 klinkekuler

C 251

- a) $\frac{82}{100}$ b) $\frac{7}{100}$ c) $\frac{132}{100}$ d) $\frac{352}{100}$

C 252

- a) 0,03 b) 0,08 c) 0,73 d) 3,20
e) 1,16 f) 0,01

C 253

- a) 2 788 biler/bilar b) 382 biler/bilar
c) 138 biler/bilar d) 721 biler/bilar

C 254

	Forbruk i %	Forbruk i kWh
Oppvarming	54	13 500
Lys	5	1 250
Støvsugning	1	250
Vask og stryking	6	1 500
Matlaging	8	2 000
Kjøleskap og fryser/ frysar	4	1 000
Varmt vann og bad/ Varmt vatn og bad	22	5 500

C 255

477 kr

C 256

6 153 kr mennesker/menneske

C 257

7 272 besøkende/besøkjande

C 258

- a) 1) 5 151,60 kr b) 7 735,98 kr
2) 609,90 kr
3) 1 728,48 kr
4) 246 kr

C 259

4 524 kr

C 260

3 854 kr

C 261

14 624 kr

C 262

114 807 besøkende/besøkjande

C 263

2 281 kr

C 264

- a) 41,7 % b) 16,7 % c) 14,3 %

C 265

600 kr

C 266

25 %

C 267

25 %

C 268

15 %

C 269

20 %

C 270

6,7 %

C 271

Trolloil gir 30 %

PRØV DEG SELV/PRØV DEG SJØLV**PC 1**

$$\frac{8}{24}$$

PC 2

a) $\frac{1}{3}$

b) $\frac{5}{11}$

c) $\frac{15}{46}$

PC 3

a) $\frac{1}{2} = \frac{12}{24}$

b) $\frac{1}{4} = \frac{6}{24}$

c) $\frac{3}{8} = \frac{9}{24}$

PC 4

$$\frac{4}{6}, \frac{8}{12} \text{ og } \frac{16}{24}$$

PC 5

a) $\frac{3}{14} < \frac{7}{14}$

b) $\frac{1}{9} = \frac{3}{27}$

c) $\frac{3}{4} < \frac{7}{5}$

d) $\frac{8}{11} > \frac{9}{44}$

PC 6

a) $18 \frac{2}{3}$

b) $69 \frac{1}{2}$

PC 7

$$\frac{1}{100}$$

PC 8

25 %

PC 9

35 %

PC 10

a) $\frac{10}{100}$

b) $\frac{8}{100}$

PC 11

a) 0,48

b) 0,01

PC 12

a) 18 %

b) 6 %

PC 13

a) 21 kr

b) 3,5 liter

PC 14

175 kr

PC 15

a) 7,25 m

b) 0,325 km

PC 16

949 kr

PC 17

4 388 kr

FYLKESOPPGAVE SØR-TRØNDELAG/ FYLKESOPPGÅVE SØR-TRØNDELAG

FC 1

a) Trondheim

b) 116 406 innbyggere/innbyggjarar

FC 2

994 år

FC 3

a) 1987

b) 1654

FC 4

a) 485 muh.

b) 725 muh.

FC 5

Du må vite hvor stort Norge er. Hun eide 162 110 m².
(ikke inkludert Svalbard og Dronning Maud Land)/
Du må vite kor stort Noreg er. Ho åtte 162 110 m².
(ikkje inkludert Svalbard og Dronning Maud Land)/

FC 6

a) 6 400 kr

b) 5 650 kr