

Afdeling / Section A:

Vraag 1 / Question 1 :

1.1 $RP = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$ ①
 $= \sqrt{(10 - 3)^2 + (2 - 4)^2}$ ①
 $= \sqrt{7^2 + (-2)^2}$
 $= \sqrt{49 + 4}$
 $= \sqrt{53}$ ② (5)

1.2 $m_{\text{line}} = \frac{y_2 - y_1}{x_2 - x_1}$ ①
 $= \frac{2 - 4}{10 - 3}$ ①
 $= \frac{-2}{7}$ ② (2)

1.3 $\tan \theta = \frac{2}{5}$ ①
 $\therefore \theta = 58^\circ$ ② (2)

1.4 $\frac{y - y_1}{x - x_1} = \frac{y_2 - y_1}{x_2 - x_1}$ ①
 $\therefore \frac{y - 4}{x - 3} = \frac{-6 - 4}{5 - 3}$ ①
 $\therefore \frac{y - 4}{x - 3} = \frac{-10}{2}$
 $\therefore 2(y - 4) = -10(x - 3)$
 $\therefore 2y - 8 = -10x + 30$
 $\therefore 2y = -10x + 38$
 $\therefore y = -5x + 19$ ② (5)

of/or

$m_p = \frac{y_2 - y_1}{x_2 - x_1}$
 $= \frac{-6 - 4}{5 - 3}$ ①
 $= \frac{-10}{2}$
 $= -5$ ②

$m = -5$ P(3;4):

$y - y_1 = m(x - x_1)$ ①
 $\therefore y - 4 = -5(x - 3)$ ①
 $\therefore y - 4 = -5x + 15$ ①
 $\therefore y = -5x + 19$ ② (5) [15] ✓

Vraag 2 / Question 2 :

2.1 $y = -x + 2$ ① $x^2 + y^2 = 52$ ②

① in ②:
 $\therefore x^2 + (-x + 2)^2 = 52$
 $\therefore x^2 + x^2 - 4x + 4 = 52$
 $\therefore 2x^2 - 4x - 48 = 0$
 $\therefore x^2 - 2x - 24 = 0$
 $\therefore (x - 6)(x + 4) = 0$
 $\therefore x = 6$ of $x = -4$ ①

$y = -6 + 2$ $y = -(-4) + 2$
 $\therefore y = -4$ ① $= 6$

B(6; -4) ① A(-4; 6) ② (8)

2.2 $m\left(\frac{x_1 + x_2}{2}; \frac{y_1 + y_2}{2}\right)$
 $= m\left(\frac{6 + (-4)}{2}; \frac{-4 + 6}{2}\right)$
 $= m\left(\frac{2}{2}; \frac{2}{2}\right)$
 $= m(1; 1)$ ② (3)

2.3 x-axisit: y=0
 $0 = -x + 2$
 $\therefore x = 2$ ✓ (2)

y-axisit / y-intercept: x=0
 $\therefore y = -(0) + 2$
 $\therefore y = 2$ ✓ (2) [15] ✓

Wrag 3 / Question 3 :

3.1 $4y + 2x = 8$

$\therefore 4y = -2x + 8$

$\therefore \frac{4y}{4} = \frac{-2x + 8}{4}$

$\therefore y = -\frac{1}{2}x + 2$ (2)

3.2 $m = -\frac{1}{2}$ (1)

3.3 $m = 2$ (1) $(2, -3)$:

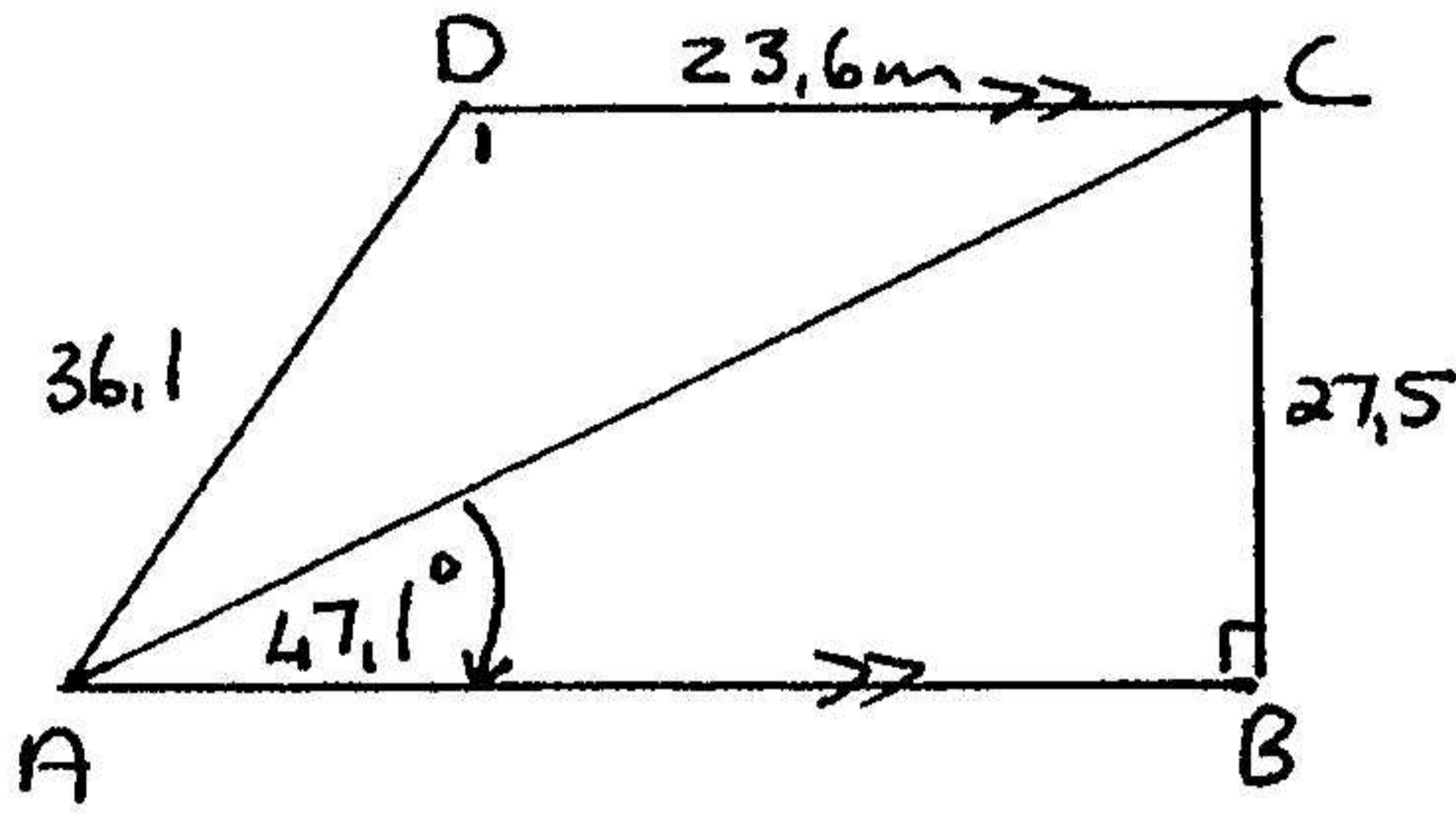
$y - y_1 = m(x - x_1)$

$\therefore y + 3 = 2(x - 2)$ (1)

$\therefore y = 2x - 4 - 3$

$\therefore y = 2x - 7$ (5) [8] ✓

TRIG Vraag 4



4.1. $b = \frac{\sin B \times a}{\sin A}$

$= \frac{\sin 90^\circ \times 27.5}{\sin 47.1}$

$\checkmark = 37.5 \text{ m} \quad (4)$

4.2 $\hat{ACD} = 47.1^\circ$

Verwisselende

binne \hat{C} (2)

Alternale \hat{C}

\checkmark

4.3 $\sin D = \frac{d \times \sin C}{c}$

$= \frac{35.7 \times \sin 47.1}{36.1}$

$\checkmark = 0.724$

$\hat{D} = 46.4^\circ \quad (5)$

4.4 Oppv $\Delta ACD = \frac{1}{2} ad \sin C$

$= \frac{1}{2} (23.6) (35.7) \sin 47.1$

$= 308.5 \text{ m}^2 \quad (3)$

$\checkmark \quad [14] \checkmark$

Vraag 5

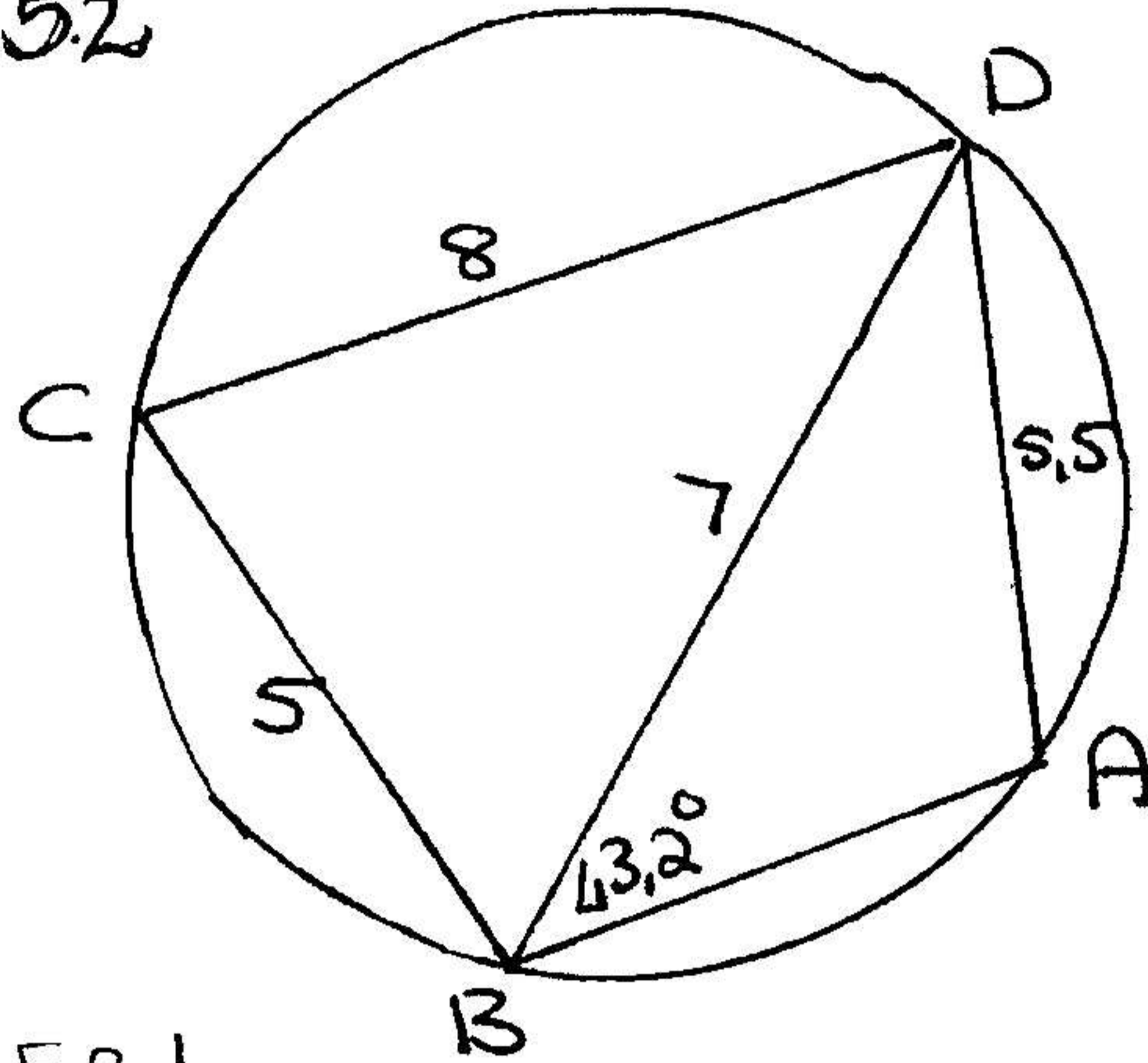
5.1.1 $q^2 = p^2 + r^2 - 2pr \cos Q$

5.1.2 Oppv = $\frac{1}{2} pr \sin R$

5.1.3 $q = \frac{\sin Q \times r}{\sin R} \quad (6)$

\checkmark

5.2



5.2.1

$\cos C = \frac{b^2 + d^2 - c^2}{2bd}$

$= \frac{8^2 + 5.5^2 - 7^2}{2(8)(5)}$

$= \frac{40.1}{80}$

$= 0.501$

$\checkmark \hat{C} = 60^\circ \quad (6)$

5.2.2

$\sin A = \frac{a \times \sin B}{b}$

$= \frac{7 \times \sin 43.2}{5.5}$

$= 0.871$

$\hat{A} = 60.6^\circ \quad (5)$

\checkmark

$[17] \checkmark$

Vraag 6

$e^2 = w^2 + x^2 - 2wx \cos E$

$= 115^2 + 90^2 - 2(115)(90) \cos 119^\circ$

$= 13225 + 8100 + 10035.5$

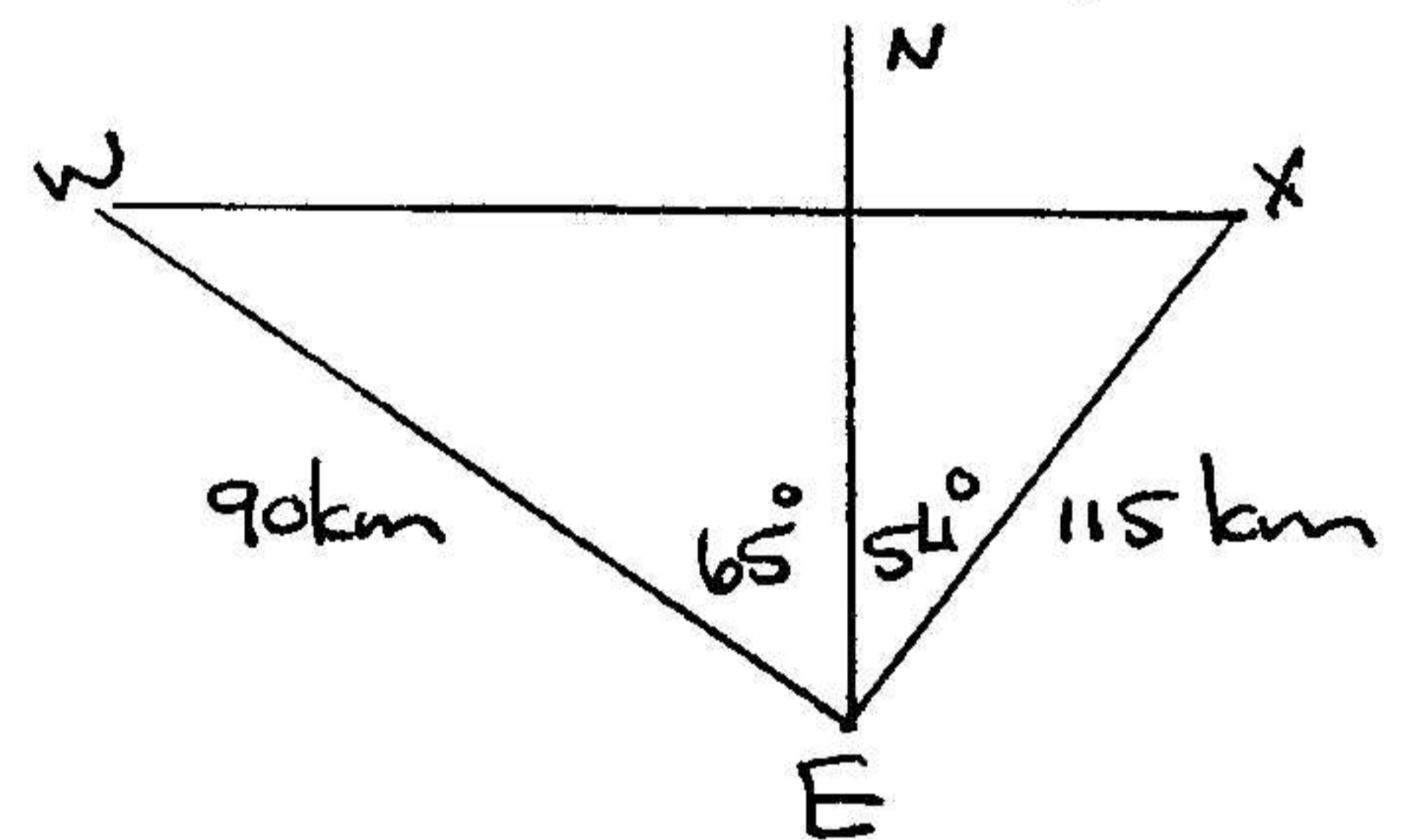
$= 31360.559$

$= 177 \text{ km} \quad (7)$

$[7]$

\checkmark

$[38] \checkmark$



$$\begin{array}{r} 7. \quad R\ 19\ 000 \\ - \quad 3\ 800 \\ \hline 15\ 200 \end{array}$$

$$I = \frac{15200 \times 2 \times 10}{100} \\ = \underline{R\ 3040}$$

$$\therefore R\ 15200 + R\ 3040 = \underline{R\ 18240}$$

$$\text{per month} \quad \frac{18240}{24} = \underline{R\ 760}$$

✓

(9)

[9]

Vraag 8.

$$\begin{aligned} 8.1 \quad & R 16300 + 42\% \text{ van } (73420 - 60000) \\ & = 16300 + 42\% \times 13420 \\ & = 16300 + 5636,40 \\ & = \underline{21936,40} \quad (4) \end{aligned}$$

$$\begin{aligned} 8.2 \quad & R 73420 \times 9,5\% = 6974,90 \\ & = R 73420 + 6974,90 \\ & = \underline{R 80394,90} \end{aligned}$$

$$\begin{aligned} \therefore & R 24700 + 43\% \text{ van } (80394,90 - 80000) \\ & = 24700 + 43\% \times 394,90 \\ & = 24700 + 169,80 \\ & = \underline{R 24869,80.} \quad (5) \end{aligned}$$

✓
[9]

Vraag 9

9.1 R 35,00
 9.2 R 45,50
 9.3 R 63,00
 9.4 R 70,00
 9.5 R 210,00
R 423,50

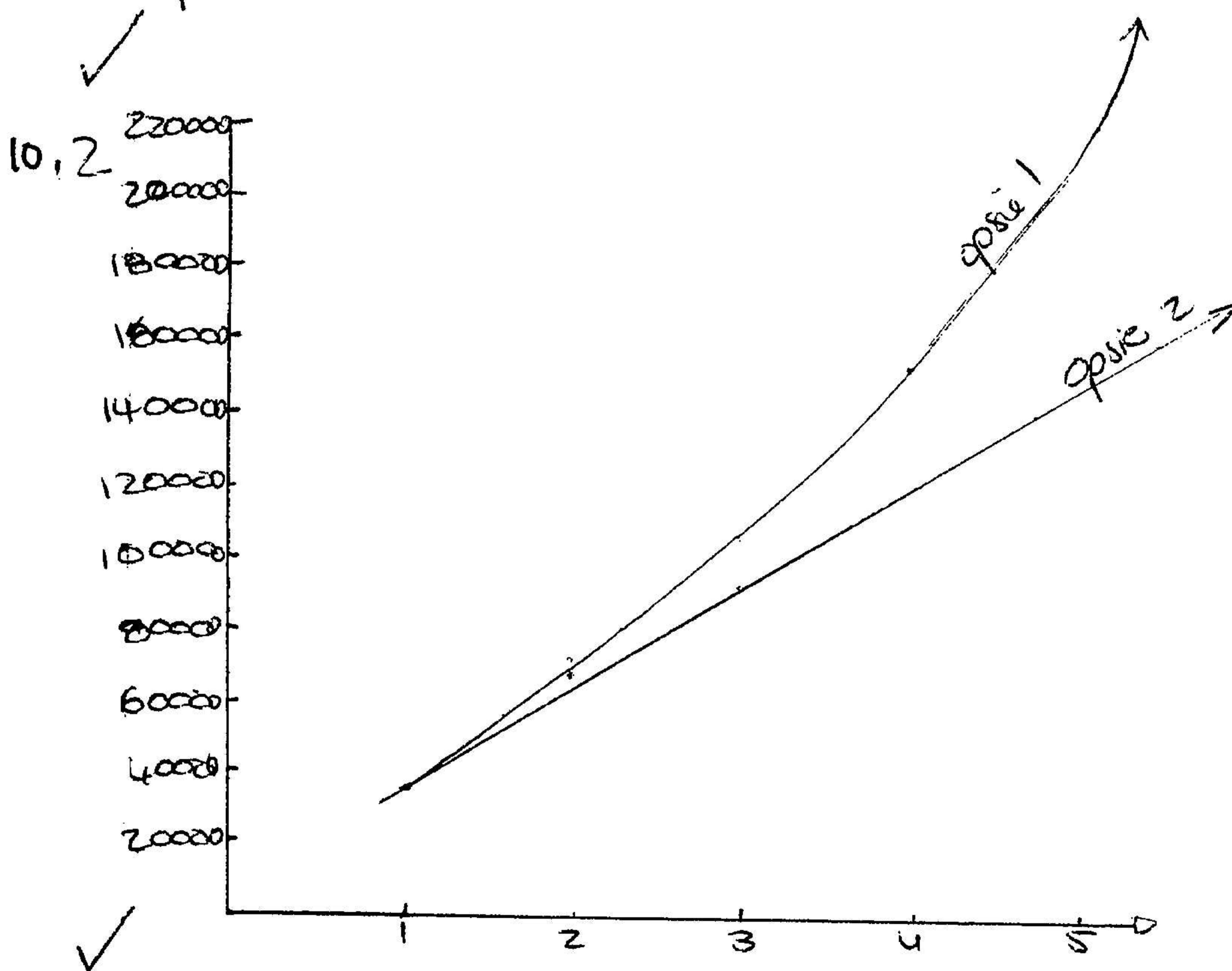
(1)
 (1)
 (1)
 (1)
 (1)
 (2)

(3) ✓
 [3]

✓ Vraag 10

10.1		1	2	3	4	5
Rente Opsie 1		30600	66708	109315	159592	218918
Rente Opsie 2		30600	61200	91800	122400	153000

(3)



(4)

10.3 ✓ Opsie 1

(1)

10.4.1 ✓ R 122400

(2)

10.4.2 ✓ R 159592

(2)

[3] ✓ [2]

Afdeling D

Boogmaat ①

Vraag 11

$$\theta = 135^\circ \div 57,3$$

$$= 2,35 \text{ rad}$$

$$S = r\theta$$

$$= 12 \times 2,35$$

$$\checkmark = 28,2 \quad (4)$$

11.2.1

$$112,4 \div 57,3$$

$$\checkmark = 1,96 \text{ rad} \quad (2)$$

11.2.2

$$\frac{270}{1} \times \frac{\pi}{180}$$

$$\checkmark = \frac{3\pi}{2} \text{ rad} \quad (2)$$

11.3.1

$$4,1 \times 57,3$$

$$\checkmark = 235,9 \quad (2)$$

11.3.2

$$\frac{6 \text{ rad}}{1} \times \frac{180}{\pi}$$

$$\checkmark = 1080^\circ \quad (3) [13]$$

Vraag 12

$$Oppv = \frac{1}{2} r^2 \theta$$

$$101,7 = \frac{1}{2} (1,8)^2 \theta$$

$$101,7 = 1,62 \theta$$

$$\theta = 0,627 \text{ rad}$$

$$\checkmark \theta = 36^\circ \quad (6)$$

Vraag 13

$$\theta = 30^\circ$$

$$= 0,52 \text{ rad}$$

$$Oppv = \frac{1}{2} r^2 (\theta - \sin \theta)$$

$$= \frac{1}{2} (1,5)^2 (0,52 - \sin 30^\circ)$$

$$= 1,125 (0,02)$$

$$\checkmark = 2,25 \quad (6)$$

Vraag 14

14.1

$$\theta = 60^\circ \div 57,3$$

$$\checkmark = 1,05 \text{ rad} \quad (2)$$

14.2

$$Oppv = \frac{1}{2} r^2 \theta$$

$$\checkmark = \frac{1}{2} (55)^2 (1,05)$$

$$= 1588,13 \quad (4)$$

[6]

Vraag 15

$$15.1 \quad w = 2\pi f$$

$$219,9 = 2\pi f$$

$$219,9 = 6,28 f$$

$$\checkmark 35 \frac{1}{2} f \quad (3)$$

15.1

$$v = \omega r$$

$$\frac{32896,7}{219,9} = 219,9 r$$

$$149,5 = r \quad (3)$$

$$\checkmark [6]$$

[37]

RATIOS, PROPORTION & SIMILARITY

AFD/SEC E Ur./Q. 16

16.1 $\frac{KN}{NL} = \frac{KP}{Pm}$ (2) ✓

16.2
16.2.1 $\frac{AD}{DB} = \frac{AE}{EC}$ (DE || BC) (1)

$\frac{AD}{3} = \frac{4}{6}$ (3) ✓

AD = 2 (1)

16.2.2 $\frac{BF}{FC} = \frac{BD}{DA}$ (DF || AC) (1)

$\frac{BF}{4} = \frac{3}{2}$ (3) ✓

BF = 6 (1) ✓

[8] ✓

Ur./Q. 17

17.1 $\frac{AD}{DF} = \frac{AE}{EG}$ (2) ✓

17.2 $\frac{AF}{FB} = \frac{AE}{EG}$ (2) ✓

17.3 $\frac{AF}{FB} = \frac{AG}{GC}$ (2) ✓

17.4 $\frac{AE}{EG} = \frac{AG}{GC}$ (1) ✓

[7] ✓

Ur./Q. 18

18.1

✓ 18.1 $\hat{A} = \hat{C}$ (1)

✓ 18.2 || (Similar) (1) (1)

✓ 18.3 $\frac{AB}{CB} = \frac{BD}{BD} = \frac{AD}{CD}$ (3)

[5] ✓

Ur./Q. 19

19.1 $\hat{P}_2 = 75^\circ$ (1)

✓ $\hat{K} = 75^\circ$ (2)

19.2 In ΔMLK and ΔMNP

$\hat{M} = \hat{M}$ [Common L / Vert L]

$\hat{L} = \hat{N}$ [both = 90° / both = 90°]

$\hat{K} = \hat{P}$ [Proved / Reads bewys]

$\Delta MLK \parallel \Delta MNP$ (LL)

✓ (3)

19.3 $\frac{ML}{MN} = \frac{100}{400}$ (2) ✓

19.4 $\frac{ML}{MN} = \frac{KL}{NP}$ (Similar Δ) ✓

$\frac{100}{40} = \frac{KL}{20}$ (3) ✓

KL = 50 (1)

[10] ✓

Ur./Q. 20

✓ 20.1 $\hat{B}_2 = 30^\circ$ [alt. \angle s / Vert \angle s]
 $\hat{L}_2 = 40^\circ$ [alt. \angle s / Vert \angle s]

(4)

20.2

In ΔDEF and ΔCBF

$$\hat{D}_1 = \hat{C}_2 \quad [\text{alt. } \angle\text{s} / \text{vert. } \angle\text{s}] \textcircled{1}$$

$$\hat{E}_1 = \hat{B}_2 \quad [\text{alt. } \angle\text{s} / \text{vert. } \angle\text{s}] \textcircled{1}$$

$$\hat{F}_1 = \hat{F}_2 \quad [\text{vert. opp. } \angle\text{s} / \text{Reflex } \angle\text{s}] \textcircled{1}$$

✓

(3)

[7] ✓

{37} ✓

Section F / Afdeling F:

Vraag / Question 21

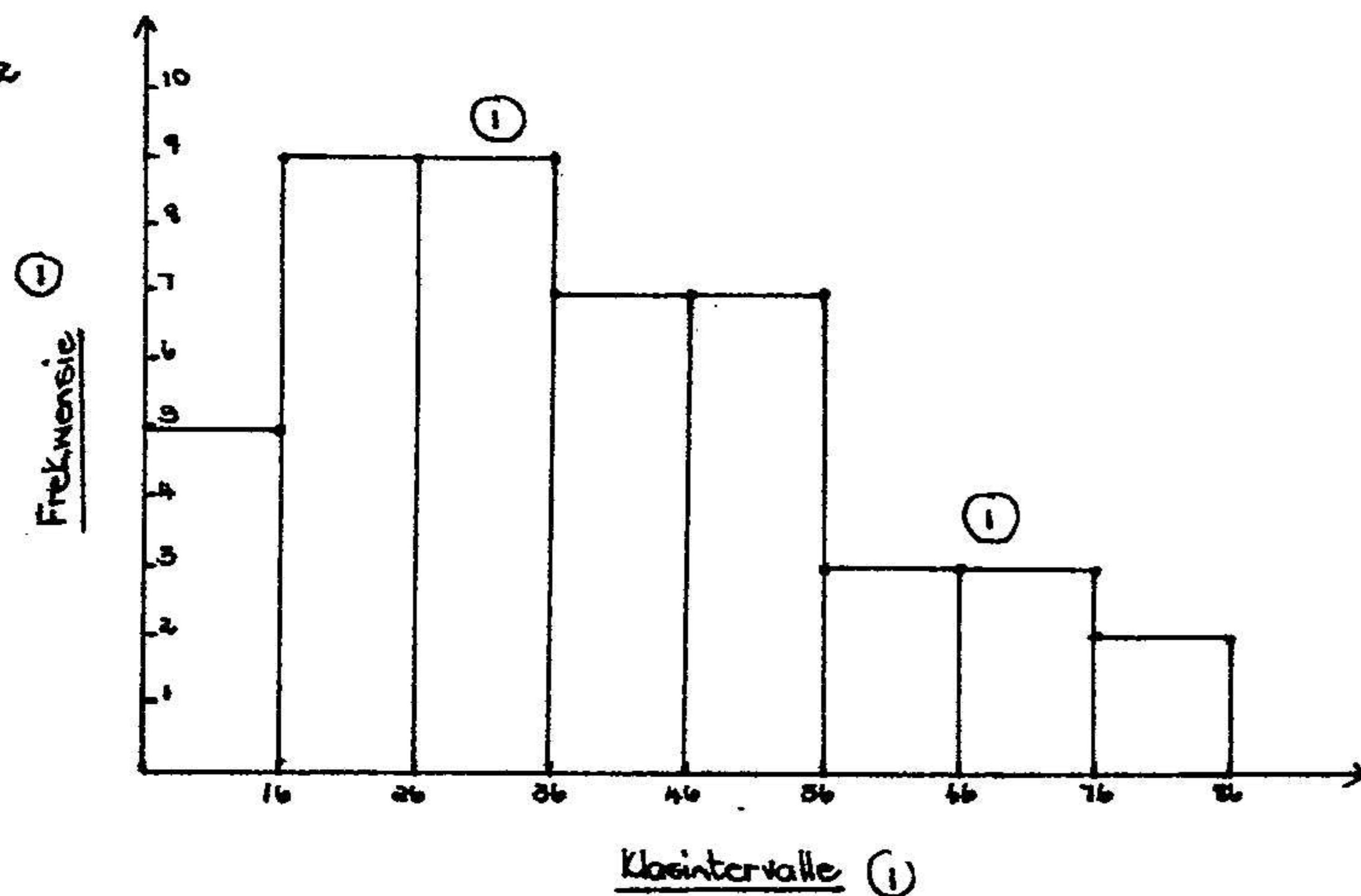
21.1

T	E
0	8 7
1	7 9 5 3 3 8 1
2	5 5 5 7 0 0 9
3	5 4 2 0 5 6 2
4	4 0 0 3 8 0 2 6 9
5	0 1 2 5 3
6	5 3 7 3 9
7	2
8	6 0

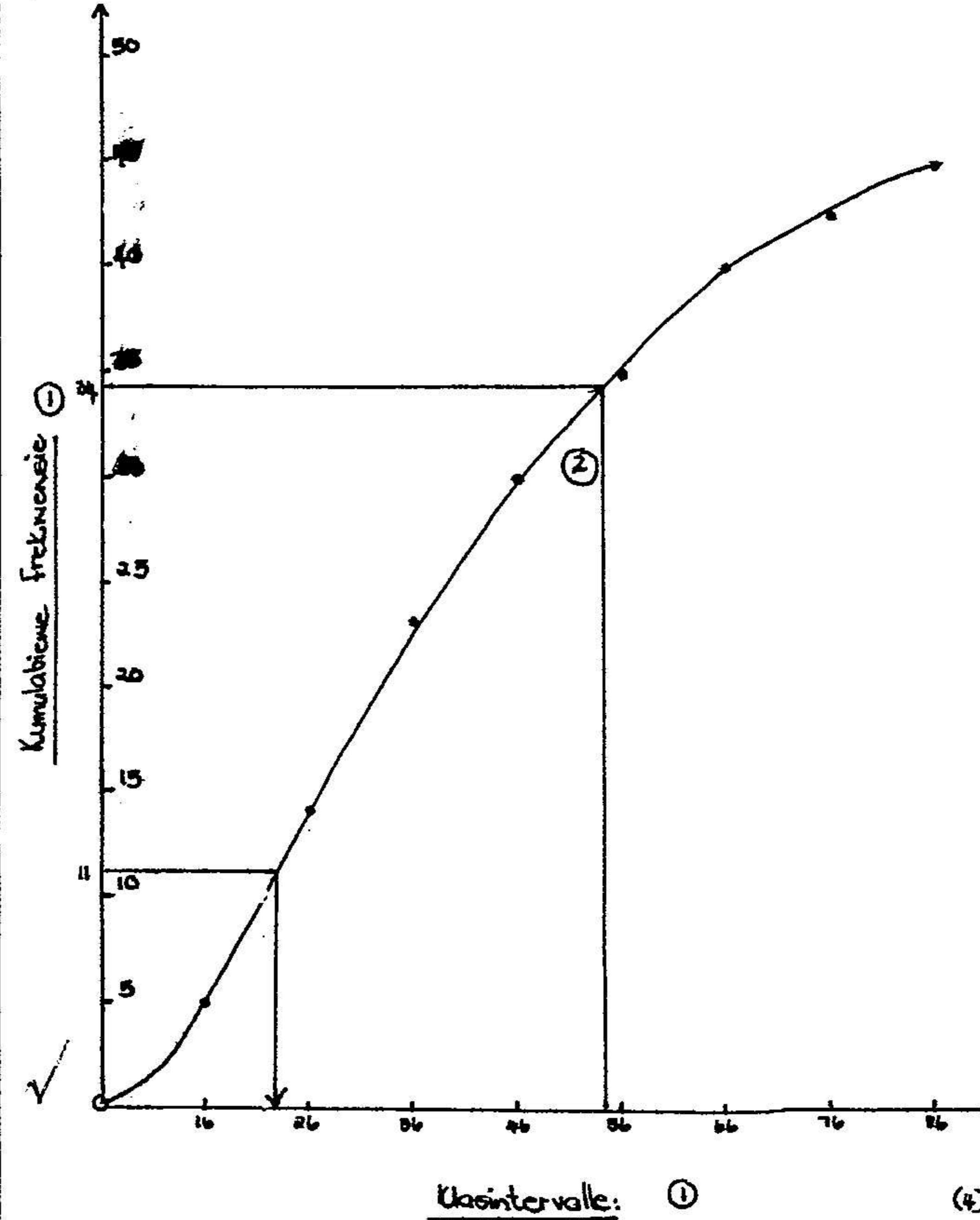
21.2.1

Klasinterval	Telling	Frekwensie	Kumulatiewe Frekwensie
7-16	##	5	5
17-26	## III	9	14
27-36	## III	9	23
37-46	## II	7	30
47-56	## II	7	37
57-66	III	3	40
67-76	III	3	43
77-86	II	2	45

21.2.2



21.2.3



21.2.4 Eerste Kwartiel - 22
Derde Kwartiel - 54

21.3

- 7 8 12 13 15 17 17 18 19 20 20 25 25 25 27 29 30 32 32 34 35 35 36 40 40 40 42 43 44
46 48 49 50 51 52 53 55 62 63 65 67 69 72 80 86

21.4

25 27 40

21.5

36

21.6

$$\frac{1750}{45} = 39$$

21.7

Gebied / Range: $86 - 7 = 79$

21.8

$$s = \sqrt{\frac{\sum x^2 - n\bar{x}^2}{n-1}}$$

$$= \sqrt{\frac{81330 - 45(1821)^2}{45-1}}$$

$$= \sqrt{\frac{20490}{44}}$$

$$= \sqrt{465,6818182}$$

$$= 21,6$$