

Vraag 1

Question 1

1.1 Gebruik slegs 'n linaal en 'n passer om 'n hoek van 195° te konstrueer.

1.1 Using only a ruler and a pair of compasses, construct an angle of 195° . (4)

1.2 Die omtrek van ΔPQR is 14 cm. Die lengtes van sye PQ, QR en PR is in die verhouding 2 : 2 : 3. Konstrueer ΔPQR . Watter tipe driehoek is ΔPQR ?

1.2 The perimeter of ΔPQR is 14 cm. The lengths of sides PQ, QR and PR are in the ratio 2 : 2 : 3. Construct ΔPQR . What type of triangle is ΔPQR ? (6)

1.3 Konstrueer vierkant ABCD met $AB = 4$ cm.

1.3 Construct square ABCD with $AB = 4$ cm. (4)

1.3.1 Meet die hoeklyne AC en BD korrek tot 1 desimale syfer.

1.3.1 Measure the diagonals AC and BD, correct to 1 decimal digit. (2)

1.3.2 Die hoeklynne sny in O. Meet OA, OC, BO en DO. Wat merk jy op?

1.3.2 The diagonals intersect in O. Measure AO, OC, BO and DO. What do you find?

(15)

1.3.3 Meet die hoek by O. Wat merk jy op?

1.3.3 Measure the angles at O. What do you find?

(8)

Vraag 2

Question 2

2.1 Bepaal met reëls, die groottes van elke onbekende.

Determine, with rulers, the size of each unknown.



(7)

2.2 O is die middelpunt van die sirkel en $AB = DC$. Bewys dat

$$\hat{O}_1 = \hat{O}_2$$

O is the centre of the circle and $AB = DC$. Prove that

$$\hat{O}_1 = \hat{O}_2$$



(6)

2.3 In bygaande skaak is $BE = DC$ en $\hat{B}_2 = \hat{C}_2$. Bewys dat:

In the figure alongside, $BE = DC$ and $\hat{B}_2 = \hat{C}_2$. Prove that:

$$2.3.1 \triangle BCD = \triangle CBE$$

(4)

$$2.3.2 AB = AC$$

(2)



2.4 Is die volgende figuur getriëng? (2)

2.4 Are the following figures similar? (2)

2.4.1

2.4.2



(2)

- 2.5 2.5.1 Bewys dat die twee driehoeke gelykwydig is.

Prove that the two triangles are similar.



- 2.5.2 Bepaal die waardes van x en y .

- 2.5.3 Dwing die waardes van x en y . [20]

Vraag 3

Question 3

- 3.1 Bepaal die grootte van die onbekende hoek:

3.1.1



(7)

- 3.1 Calculate the sizes of the unknown angles:

3.1.2



(5)

- 3.2 In die figuur is $\hat{Y} = 90^\circ$, $\hat{A}_1 = 32^\circ$.

$AB \parallel XY$ en $BC \parallel ZX$.

In the figure $\hat{Y} = 90^\circ$, $\hat{A}_1 = 32^\circ$.

$AB \parallel XY$ and $BC \parallel ZX$.



Determine, with reasons, the sizes of:

- 3.2.1 \hat{X} (2) 3.2.2 \hat{B}_1 (2)
 3.2.3 \hat{B}_2 (2) 3.2.4 \hat{B}_3 (3)
 3.2.5 \hat{C}_1 (2)

Vraag 4

Question 4

- 4.1 Bepaal:

Determiner:



[25]

D2

D2

- 4.1.1 die oppervlakte van ΔABC , (3)
 4.1.2 die lengte van BC , (2)
 4.1.3 die waarde van x . (4)

- 4.2 In ΔABC is $3\hat{A} = 2\hat{B} = 6\hat{C}$. Bewys dat ΔABC reghoekig is. (4)
 4.2 In ΔABC is $3\hat{A} = 2\hat{B} = 6\hat{C}$. Prove that ΔABC is a right-angled triangle. (5)

Vraag 5

Question 5

- 5.1 $ABCD$ is 'n parallellogram.

$ABCD$ is a parallelogram.

- 5.1.1 Indien $DC = 8,5$ cm en die oppervlakte van $ABCD$ $56,95$ cm^2 is, bereken die hoogte van die parallellogram. (4)
 5.1.1 If $DC = 8,5$ cm and the area of $ABCD$ is $56,95$ cm^2 , calculate the height of the parallelogram. (4)



- 5.1.2 Hêël die oppervlakte van $96,80$ cm^2 na mm^2 . (2)
 5.1.2 Convert the area of $96,80$ cm^2 to mm^2 . (2)

- 5.2 Bepaal die oppervlakte en omtrek van die figuur. Langsaan: $AC = 15$ cm en $BC = 8$ cm.
 Determine the area and perimeter of the figure alongside. $AC = 15$ cm and $BC = 8$ cm.



(11)

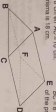
(17)

Vraag 6

Question 6

- 6.1 Wat is die hoogte, netk tot die massasentrum, van 'n 5 l silindriese fles met 'n radius van 10 cm? (3)
 6.1 What is the height, correct to the nearest cm, of a 5 l cylindrical container with a radius of 10 cm? (3)

- 6.2 In die onderstaande driehoekige prisma is $AD = 8$ cm, $BC = 8$ cm en $AC = 10$ cm. Die hoogte van die prisma is 18 cm.
 In the triangular prism below, $AD = 8$ cm, $BC = 8$ cm and $AC = 10$ cm. The height of the prism is 18 cm.



Memo: 67; 68

- 6.2.1 Toon aan dat $\triangle ABC$ 'n regthoekige driehoek is.
- 6.2.2 Berekén die buite-oppervlakte van die prisma.

- 6.2.1 Show that $\triangle ABC$ is a right angled triangle.
- 6.2.2 Calculate the surface area of the prism.

Question 7

- 7.1 Noem die vyf platoneese vaste liggame.

- 7.1 Name the five platonic solids.

7.2



- 7.2.1 Die vlakke in die figuur is poligone. Identifiseer die tipe poligone.

- 7.2.1 The faces of this figure are polygons. Identify the type of polygon.

- 7.2.2 Skryf neer die aantal:

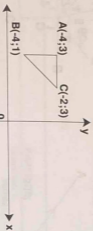
- (a) vlakke,
(b) kante,
(c) hoekpunt,
(d) vlakke wat by 'n hoekpunt ontmoet.

- 7.2.2 Write down the number of:
(a) faces,
(b) edges,
(c) vertices,
(d) faces that meet at a vertex.

Vraag 8

Question 8

8.1



(4)

- 8.1.1 Beskryf die transformasie van $\triangle ABC$ na $\triangle A'B'C'$:

- (a) deur die notasie $(x,y) \rightarrow \dots$ te gebruik,
(b) in woorde.

- 8.1.1 Describe the transformation from $\triangle ABC$ to $\triangle A'B'C'$:

- (a) by using the notation $(x,y) \rightarrow \dots$,
(b) in words.

- 8.1.2 Voer die volgende transformasies uit deur dit op die assieselstel te teken en die koördinate van die hoekpunte neer te skryf:

- 8.1.2 Perform the following transformations by drawing them on the system of axes and by writing down the coordinates of the vertices:

- (a) verplaas $\triangle ABC$ 3 eenhede af en 2 eenhede na regs, noem die verplasing $\triangle PQR$.
- (b) roter $\triangle ABC$ deur 'n hoek van 90° anti-klokgewys om die oorsprong na $\triangle VWX$.

- (a) translate $\triangle ABC$ 3 units down and 2 units to the right, label the translation $\triangle PQR$.
- (b) rotate $\triangle ABC$ anti-clockwise about the origin through an angle of 90° to $\triangle VWX$.

- (c) reflekteer (spieël) $\triangle ABC$ in die lyn $x = 0$ en noem die refleksie $\triangle KLM$.

- (c) reflect $\triangle ABC$ in the line $x = 0$ and label the reflection $\triangle KLM$.

- 8.2 $\triangle ABC$ met $A(0;0)$, $B(-2;3)$ en $C(-3;1)$ word vergroot. Die reël vir die vergroting is: $(x,y) \rightarrow (3x;3y)$.

- 8.2 $\triangle ABC$ with vertices $A(0;0)$, $B(-2;3)$ and $C(-3;1)$ is enlarged. The rule for the enlargement is: $(x,y) \rightarrow (3x;3y)$.

- 8.2.1 Skop die hoekpunte van $\triangle ABC$ en $\triangle ABC'$ op 'n assieselstel en verbind die punte.

- 8.2.1 Plot the vertices of $\triangle ABC$ and $\triangle ABC'$ on a system of axes and join the points.

- 8.2.2 Wat is die vergrotingsfaktor?

- 8.2.2 What is the enlargement factor? (1)

Vraag 9

Question 9

- 9.1 Die tabel toon die maksimum temperatuur gemeet gedurende een week.

- 9.1 The table shows the maximum temperatures measured during one week.

Ma/Mo	Di/Tu	Wo/We	Do/Th	Vr/Fr	Sa/Sa	Son/Su
25°C	27°C	30°C	25°C	20°C	22°C	25°C

- 9.1.1 Teken 'n gebroke lyngrafiek van die datastel hierbo.

- 9.1.1 Draw a broken line graph of the data set above.

- 9.1.2 Wat was die hoogste temperatuur vir die week?

- 9.1.2 What was the highest temperature for the week? (1)

- 9.1.3 Hoekom gebruik ons 'n gebroke lyn om die gegewens voor te stel?

- 9.1.3 Why do we use a broken line graph to represent the data? (2)

- 9.1.4 Bepaal die:

- 9.1.4 Determine the:

- (a) gemiddelde maksimum temperatuur vir die week,

- (a) average maximum temperature for the week, (3)

- (b) modale temperatuur (modus),

- (b) modal temperature (mode), (1)

- (c) mediaan temperatuur,

- (c) median temperature. (3)

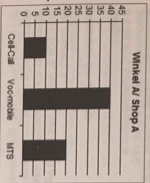
(d) omvang van die temperatuur.

(d) range of the temperatures.

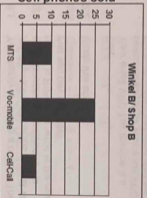
9.2 Minty werk vir 'n selfoonmaatskappy. Hy het die volgende inligting by twee van hulre winkels ingesamel.

9.2 Minty works for a cell phone company. He recorded the following information at two of their shops.

Selfone verkoop Cell phones sold



Selfone verkoop Cell phones sold



9.2.1 Watter netwerk is die populêrste? Motiveer jou antwoord.

9.2.1 Which network is the most popular? Motivate your answer. (2)

9.2.2 Watter winkel is die "beste winkel" vir die maatskappy? Hoekom sê jy so?

9.2.2 Which shop is the "best shop" for the company? Why do you say so? (2)

Vraag 10

Question 10

10.1 Die drie moontlike uitkomstes van 'n sokkerwedstryd is wen, gelykop speel of verloor. Batana-Batana het twee wedstryde by Soccer City gespeel.

10.1 The three possible outcomes of a soccer game are win, draw or lose. Batana-Batana played two games at Soccer City.

10.1.1 Voltooi 'n tweerigtingstabel om 'n lys van al die moontlike uitkomstes te maak:

10.1.1 Complete a two-way table to list all the possible outcomes:

	Wen (W) / Win (W)	Gelykop (G) / Draw (D)	Verloor (V) / Lose (L)
Wen (W) / Win (W)			
Gelykop (G) / Draw (D)			
Verloor (V) / Lose (L)			

10.1.2 Wat is die waarskynlikheid om

10.1.2 What is the probability of

(a) albei wedstryde te wen,

(a) winning both games,

(b) een wedstryd te wen en een te verloor,

(b) winning 1 game and losing 1 game,

(c) ten minste een wedstryd te wen?

(c) winning at least 1 game?

Memo: 70

(2)

[21]

10.2 Daar is gewoonlik 42 lekkers in 'n boksie. Die boksie bevat groen en rooi lekkers. As jy ewekansig 'n lekker uit die boksie neem, is die waarskynlikheid dat dit 'n rooie is $\frac{3}{7}$. Hoeveel groen lekkers is in die boksie?

10.2 There are usually 42 sweets in a box. A box contains green and red sweets. If you take a sweet randomly from the box the probability that it is a red one is $\frac{3}{7}$. How many green sweets are in the box?

(4)

[10]