



Toets: Kwartaal 3, 2023 – Memorandum

VRAAG 1

1.1 Vereenvoudig die volgende breuke en toon alle bewerkings.

Geen sakrekenaar mag vir hierdie vraag gebruik word nie.

1.1.1 $2\frac{1}{4} + 1\frac{2}{5} - \frac{1}{2}$ (4)

$$= \frac{9}{4}\sqrt{} + \frac{7}{5}\sqrt{} - \frac{1}{2}$$

$$= \frac{45+28-10}{20}\sqrt{}$$

$$= \frac{63}{20}\sqrt{}$$

1.1.2 $\frac{a}{3} - 2a + \frac{2+a}{2} - 1$ (5)

$$= \frac{a}{3} - \frac{2a}{1} + 1\sqrt{} + \frac{a}{2} - 1$$

$$= \frac{2a\sqrt{} - 12a\sqrt{} + 3a\sqrt{}}{6}$$

$$= \frac{-7a}{6}\sqrt{}$$

1.1.3 $\frac{-3\frac{1}{4}}{\sqrt{\frac{9}{4}}}$ (4)

$$= -\frac{13}{4}\sqrt{} \div \frac{3}{2}\sqrt{}$$

$$= -\frac{13}{4} \times \frac{2}{3}\sqrt{}$$

$$= -\frac{13}{6}\sqrt{}$$

1.1.4 $-2\frac{1}{3} \times \left(-\frac{5}{6}\right) \div \left(-\frac{1}{2}\right)^2$ (4)

$$= -\frac{7}{3}\sqrt{} \times \left(-\frac{5}{6}\right) \div \frac{1}{4}\sqrt{}$$

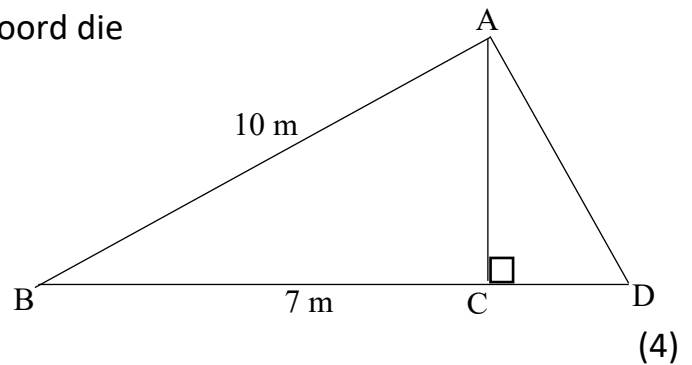
$$= -\frac{7}{3} \times \left(-\frac{5}{6}\right) \times \frac{4}{1}\sqrt{}$$

$$= \frac{140}{18}$$

$$= \frac{70}{9}\sqrt{}$$

VRAAG 2

2.1 Beskou die meegaande skets en beantwoord die vrae wat volg:



2.1.1 Bepaal die lengte van AC .

$$\hat{A}CB = 90^\circ \text{ (}\angle \text{e op 'n reguitlyn) } \checkmark$$

$$AC^2 = 10^2 - 7^2 \checkmark \text{ (Pyth) } \checkmark$$

$$AC^2 = 51$$

$$AC = 7,14 \text{ m} \checkmark$$

2.1.2 Indien $CD = \frac{AB}{2}$, bepaal die lengte van AD .

(4)

$$CD = 5 \text{ m} \checkmark$$

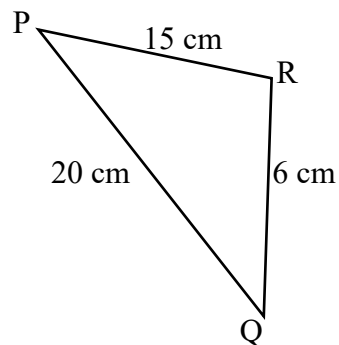
$$AD^2 = 5^2 + (7,14)^2 \checkmark \text{ (Pyth) } \checkmark$$

$$AD^2 = 75,9796$$

$$AD = 8,72 \text{ m} \checkmark$$

2.2 Beskou ΔPQR en bepaal of dit 'n reghoekige-, stomphoekige- of skerphoekige driehoek is.

(4)



$$PQ^2 = 20^2 = 400 \checkmark$$

$$PR^2 + RQ^2 = 15^2 + 6^2 = 261 \checkmark$$

$$PQ^2 > PR^2 + RQ^2 \checkmark$$

$$\therefore \Delta PQR \text{ is stomphoekig by } \hat{R}. \checkmark$$

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VRAAG 3

3.1 Voltooi elk van die volgende omskakelings tussen eenhede:

3.1.1 $4000\text{ m} = 4\text{ km}$ ✓ (1)

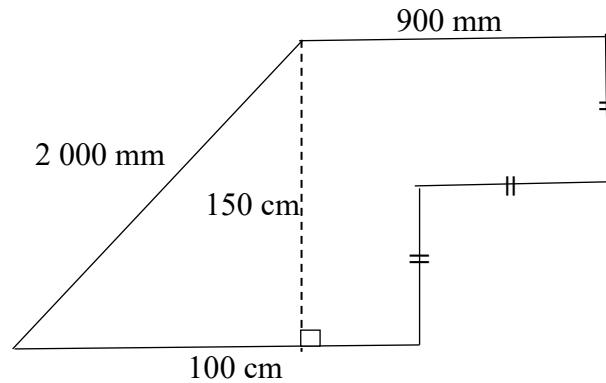
3.1.2 $34,25\text{ cm} = 342,5\text{ mm}$ ✓ (1)

3.1.3 $0,0005\text{ km} = 50\text{ cm}$ ✓ (1)

3.1.4 $35,734\text{ m} = 35\,734\text{ mm}$ ✓ (1)

3.2 Bepaal die omtrek van die volgende saamgestelde figure:

3.2.1 (4)



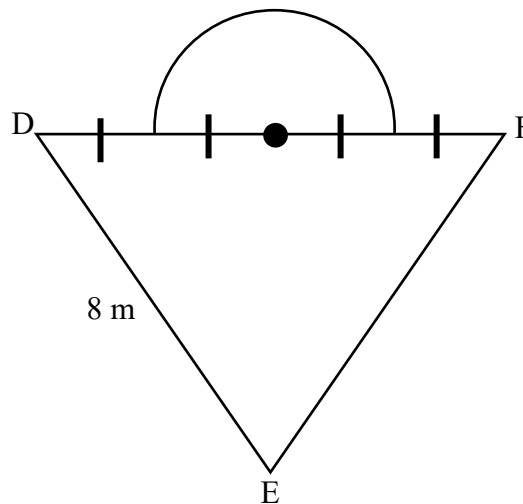
$$2\,000\text{ mm} = 200\text{ cm}$$

$$900\text{ mm} = 90\text{ cm}$$

$$\text{Omtrek} = 200\sqrt{+}90\sqrt{+}150 + 75\sqrt{+}100$$

$$\text{Omtrek} = 615\text{ cm}$$
 ✓

3.2.2 Gegee: $\triangle DEF$ is 'n gelyksydige driehoek. (4)



$$\text{Omtrek} = 8 + 8 + 4\sqrt{+} + \frac{2\pi(2)\sqrt{+}}{2\sqrt{+}}$$

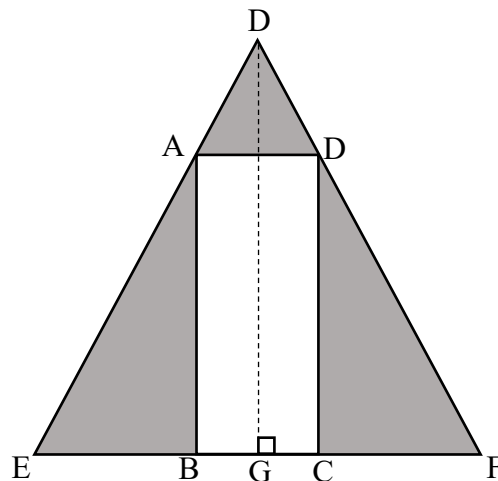
$$\text{Omtrek} = 26,28\text{ m}$$
 ✓

3.3 In die onderstaande skets is $EF = 40\text{ m}$, $DG = 30\text{ m}$ en $AB = 22\text{ m}$.

Die verhouding van $EB:BC:CF$ word gegee as $3:2:3$.

Bepaal die oppervlakte van die geskakeerde gedeelte:

(6)



$$BC = \frac{2}{8} \times 40 = 10\text{ m} \checkmark$$

$$A = \frac{1}{2} \cdot b \cdot h - l \cdot b \checkmark$$

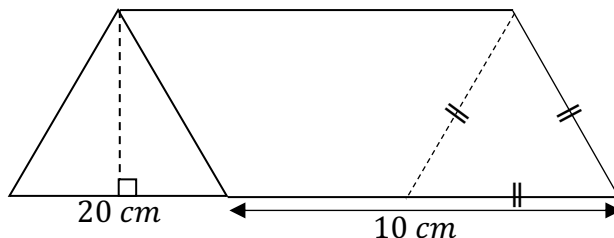
$$A = \frac{1}{2} (40)(30) - (22)(10) \checkmark$$

$$A = 380\text{ m}^2 \checkmark$$

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VRAAG 4

4.1 Beskou die onderstaande driehoekige prisma en beantwoord die vrae wat volg.



4.1.1 Bereken die loodregte hoogte van die driehoekige basis indien die oppervlakte van die driehoekige basis $173,20\text{ cm}^2$ is.

(3)

$$A = \frac{1}{2} \cdot b \cdot h \checkmark$$

$$173,20 = \frac{1}{2} (20) \cdot h \checkmark$$

$$173,20 = (10) \cdot h$$

$$17,32\text{ cm} = h \checkmark$$

4.1.2 Bereken die totale buite-oppervlakte van die driehoekige prisma.

(3)

$$TBO = 2 \left(\frac{1}{2} \cdot b \cdot h \right) + 3(L \cdot b) \checkmark$$

$$TBO = 2(173,20) + 3(20)(10) \checkmark$$

$$TBO = 946,40\text{ cm}^2 \checkmark$$

4.1.3 Bereken die volume van die prisma in mm^3 . (4)

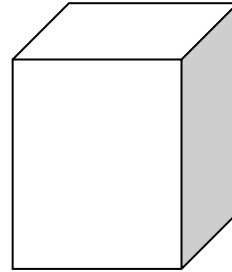
$$Volume = \left(\frac{1}{2} \cdot b \cdot \perp h\right) H \checkmark$$

$$Volume = (173,20)(10) \checkmark$$

$$Volume = 1\,732\,cm^3 \checkmark$$

$$Volume = 1\,732\,000\,mm^3 \checkmark$$

4.2 Beskou die volgende reghoekige prisma:



4.2.1 Bereken die volume van die reghoekige prisma indien die afmetings soos volg gegee word:

Lengte van die basis = 12 cm, breedte van die basis = 10 cm en hoogte van die prisma = 20 cm

(2)

$$Volume = L \cdot b \cdot H$$

$$Volume = (12)(10)(20) \checkmark$$

$$Volume = 2\,400\,cm^3 \checkmark$$

4.2.2 Hoeveel kubusse van 1 cm x 1 cm x 1 cm sal ek in die reghoekige prisma kan pas? (2)

$$Volume \text{ van } 1 \text{ kubus} = 1\,cm^3 \checkmark$$

$$\therefore 2\,400 \text{ kubusse} \checkmark$$

4.2.3 Die koste van karton beloop R15,50 per m^2 .

Wat sal die materiaalkoste van 1 prisma wees indien dit uit karton gevorm word? (4)

$$TBO = 2(l \cdot b) + 2(l \cdot h) + 2(b \cdot h)$$

$$TBO = 2(12)(10) + 2(20)(10) + 2(12)(20) \checkmark$$

$$TBO = 1\,120\,cm^2 \checkmark$$

$$TBO = 0,112\,m^2 \checkmark$$

$$Koste = 0,112 \times 15,50 = R1,74 \checkmark$$

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Totaal: [65]