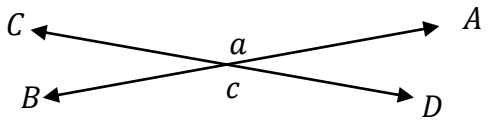
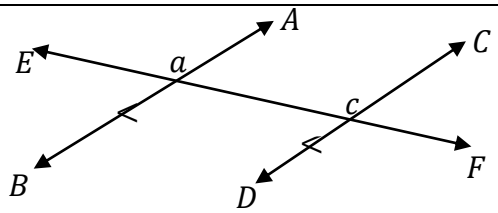
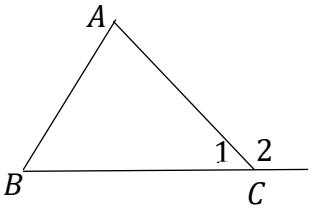
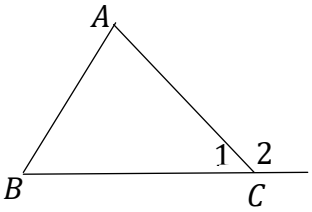
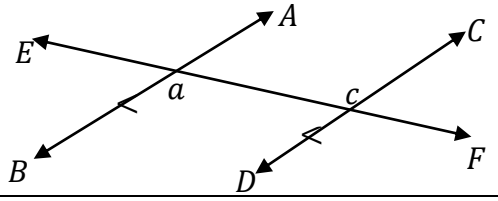
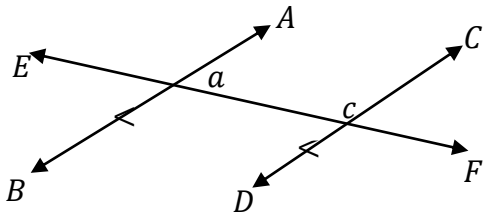
Gr 8

Totaal: 65
Tyd: 1 uur

November-eksamen, Vraestel 2, 2022 – Memorandum

Vraag 1

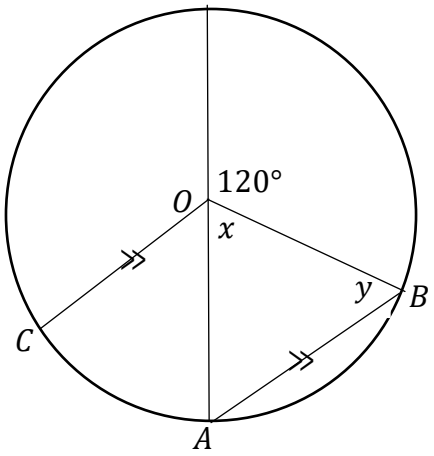
Pas die korrekte letter in kolom B by kolom A.

1.1		C√	A: $\hat{a} = \hat{c}$ [Verwisselende hoeke; AB//CD]
1.2	$\widehat{D} = 40°;\ \widehat{E} = 50°$	I√	B: $\hat{A} + \hat{B}$ [Buitehoek van Δ]
1.3		J√	C: $\hat{a} = \hat{c}$ [Regoorstaande hoeke]
1.4	 $\hat{A} + \hat{B} + \widehat{C_1} =$	H√	D: $\widehat{D} = 120°;\ \widehat{E} = 60°$
1.5	 $\widehat{C_2} =$	B√	E: $360°$
1.6	Omwenteling	E√	F: Hoeke op 'n reguit lyn
1.7		A√	G: $\hat{a} + \hat{c} = 180°$ [Ko-binnehoeke; AB//CD]
1.8	Supplementêre hoeke	D√	H: $180°$ [Binnehoeke van Δ]
1.9	$\hat{A} + \hat{B} + \hat{C} = 180°$	F√	I: Komplementêre hoeke
1.10		G√	J: $\hat{a} = \hat{c}$ [Ooreenkomstige hoeke; AB//CD]

[10]

Vraag 2

2.1 In die onderstaande skets is O die middelpunt van die sirkel.
A, B en C is punte op die omtrek van die sirkel en $AB//CO$.



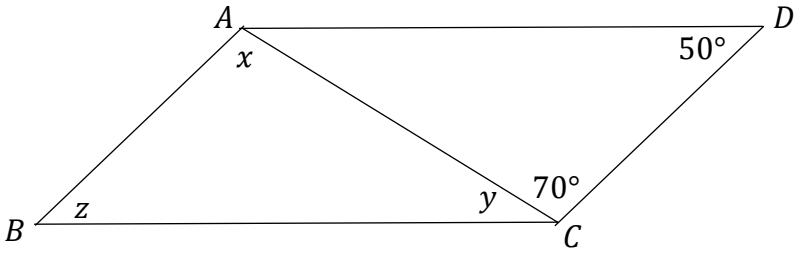
2.1.1 Bepaal, met redes, die grootte van x en y. (4)

$x = 60°$√ [Hoeke op 'n reguit lyn] √
$y = 60°$√ [Hoeke teenoor gelyke radii] √

2.1.2 Bepaal, met redes, die grootte van $A\hat{O}C$. (2)

$A\hat{O}C = 60°$√ [Ko-binnehoeke AB//CO] √

2.2 In die onderstaande figuur is $ABCD$ 'n parallelogram.

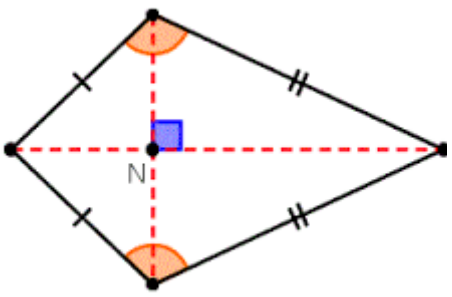


Bepaal, met redes, die grootte van x, y en z. (6)

AB//DC en AD//BC [Teenoorstaande sye van //'m is //]
$x = 70°$√ [Verwisselende hoeke; AB//DC] √
$y = 60°$√ [Ko-binne hoeke; AD//BC] √
$z = 50°$√ [Teenoorstaande hoeke van //'m is =] √

2.3 Teken die al die ontbrekende eienskappe van 'n vlieër in: (3)

√ *2 pare aangrensende sye =*
√ *1 paar teenoorstaande hoeke =*
√ *hoeklyne halveer mekaar loodreg*

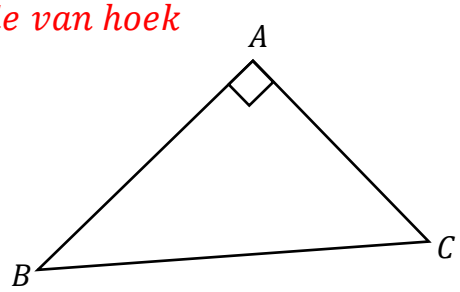


[15]

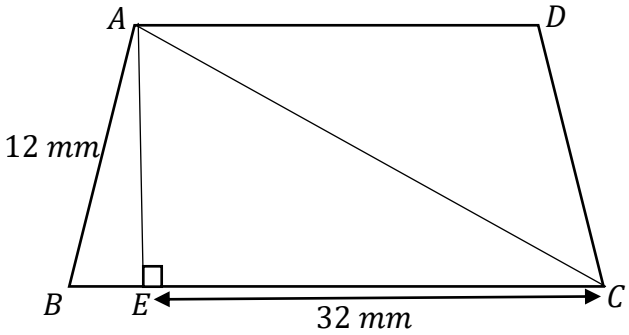
Vraag 3

3.1 Teken ΔABC sodat, $b^2 = a^2 - c^2$. (1)

$\sqrt{Posisie\ van\ hoek}$



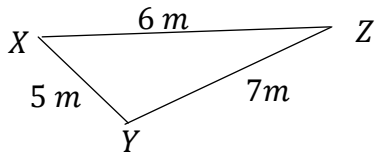
3.2 In die onderstaande figuur is $ABCD$ 'n trapesium. $BE = \frac{1}{3}AB$ en $EC = 32\ mm$.



Bepaal die lengte van AC met behulp van die stelling van Pythagoras. (5)

$BE = 4\ mm\sqrt{}$
$AE^2 = AB^2 - BE^2 \quad [Pyth]$
$AE^2 = 12^2 - 4^2 \quad [Pyth]\ \sqrt{}$
$AE = \sqrt{128}$
$AE = 11{,}31\ mm\sqrt{}$
$AC^2 = AE^2 + EC^2 \quad [Pyth]$
$AC^2 = 11{,}31^2 + 32^2 \quad [Pyth]\ \sqrt{}$
$AC = \sqrt{1151{,}9161}$
$AC = 33{,}94\ mm\sqrt{}$

3.3 In ΔXYZ is $XY = 5\ m$, $YZ = 7\ m$ en $XZ = 6\ m$. Bepaal, met redes, of ΔXYZ 'n reghoekige, stomphoekige of skerphoekige driehoek is. (4)



$YZ^2 = 7^2 = 49\sqrt{}$
$XY^2 + XZ^2 = 5^2 + 6^2 = 61\sqrt{}$
$\therefore YZ^2 < XY^2 + XZ^2\sqrt{}$
$\therefore \Delta XYZ$ is 'n Skerphoekige driehoek by $\hat{X}.\sqrt{}$

[10]

Vraag 4

4.1 Voltooi die volgende omskakelings:

4.1.1 $3\ 400\ m = 3{,}4\ km$ √ (1)

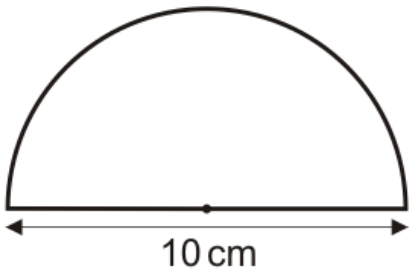
4.1.2 $300\ m = 300\ 000 mm$√ (1)

4.1.3 $23\ 000\ l = 23\ kl$√ (1)

4.1.4 $345\ cm^3 = 345\ ml$√ (1)

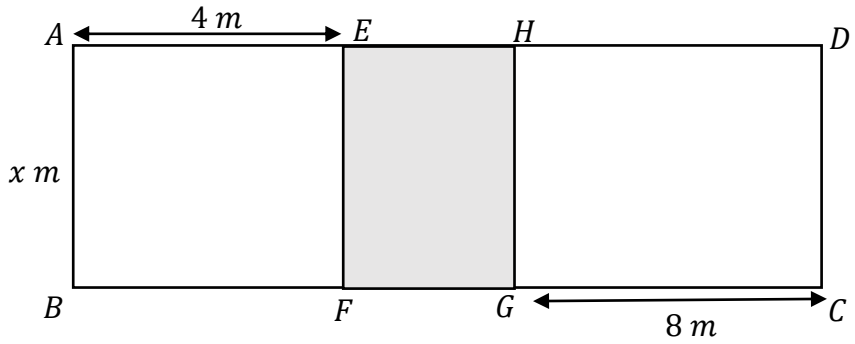
4.1.5 $2{,}34\ m^3 = 2{,}34\ kl$√ (1)

4.2 Bepaal die omtrek van die onderstaande halwe sirkel met 'n deursnee van $10\ cm$. Rond jou antwoord korrek tot twee desimale syfers af. (4)



Omtrek = $\frac{1}{2}(2\pi r) + 10\ cm$
Omtrek = $\frac{1}{2}\sqrt{(2\pi.5\sqrt{\ })} + 10\ cm$√
Omtrek = $25{,}71\ cm$√

4.3 Indien reghoek $ABCD$ 'n oppervlakte van $100x\ m^2$ het, bepaal die oppervlakte van die geskakeerde gedeelte, $EFGH$, in terme van x. (3)

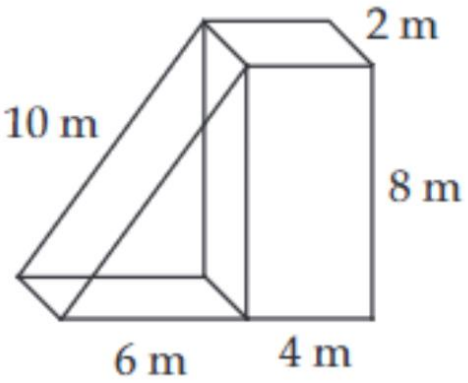


Oppervlakte $= 100x - 4x$√$-8x$√
Oppervlakte $= 88x\ m^2$√

[12]

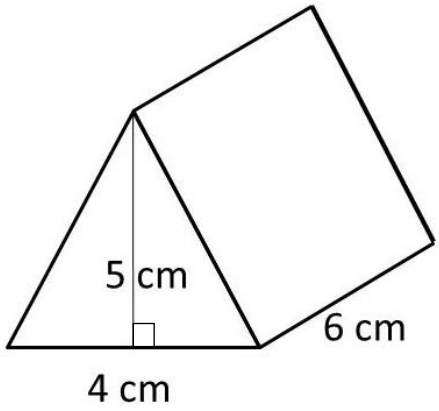
Vraag 5

5.1 Bepaal die totale buite oppervlakte van die volgende saamgestelde figuur: (5)



TBO = $2\left(\frac{1}{2}.b.\perp H\right) + (L.b) + 2(L.b) + 2(L.b)$
TBO = $2\left(\frac{1}{2} \times 6 \times 8\right)\surd + (10 \times 2) + (6 \times 2)\surd + 2(4 \times 8)\surd + 2(4 \times 2) + (8 \times 2)\surd$
TBO = 176 $m^2\surd$

5.2 Beskou die onderstaande driehoekige prisma en beantwoord die vrae wat volg:



5.2.1 Bepaal die volume van die prisma. (3)

Volume = $(\frac{1}{2}.b.\perp h).H\surd formule$
Volume = $(\frac{1}{2} \times 4 \times 5) \times 6\surd instel$
Volume = 60 $cm^3\surd$

5.2.2 Herlei jou antwoord in vraag 5.2.1 na m^3. (1)

0,00006 $m^3\surd$

5.2.3 Indien die prisma 'n driehoekige waterbeker voorstel, wat is sy kapasiteit in liter? (2)

0,00006 $m^3 = 0{,}00006kl\surd$
$0{,}00006kl = 0{,}06l\surd$

[11]

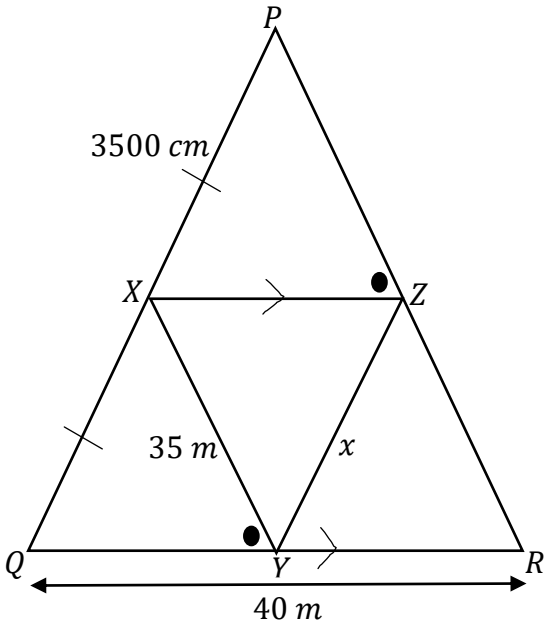
Vraag 6

6.1 Omkring die korrekte stelling: (1)

A) Indien $\Delta ABC \equiv \Delta DEF$, sal $\Delta ABC /// \Delta DEF$. √

B) Indien $\Delta ABC /// \Delta DEF$, sal $\Delta ABC \equiv \Delta DEF$.

6.2 In die onderstaande diagram is $\Delta PQR /// \Delta XYZ$, met $QR = 40\ m$, $PX = XQ$ en $XY = 35\ m$. $XZ // QR$ en $X\hat{Z}P = Q\hat{Y}X$.



6.2.1 Bewys dat $\Delta PXZ /// \Delta XQY$. (3)

In ΔPXZ en ΔXQY
$X\hat{Z}P = Q\hat{Y}X$ (gegee) √
$P\hat{X}Z = X\hat{Q}Y$ (ooreenkomstige hoeke $XZ // QR$) √
$X\hat{P}Z = Q\hat{X}Y$ (binnehoeke van Δ)
$\Delta PXZ /// \Delta XQY$ $(L;L;L)$ √

6.2.2 Bepaal die lengte van die onbekende sy, x. (3)

$\frac{PQ}{XY} = \frac{QR}{YZ}$ $[\Delta PQR /// \Delta XYZ]$
$\frac{70}{35}\surd = \frac{40}{x}\surd$
$1\ 400 = 70x$
$x = 20\ m\surd$

[7]

Totaal: [65]