

Wiskunde Gr.10 Toets 1 - Memo

60 minute

50 punte

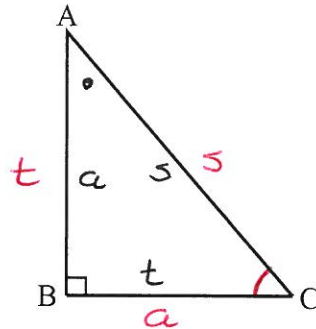
Vraag 1: [10]

Skryf die volgende in terme van die sye van die onderskeie driehoeke:

1.1 (a) $\sin A$

(b) $\cot C$

(c) $\cos C$



(6)

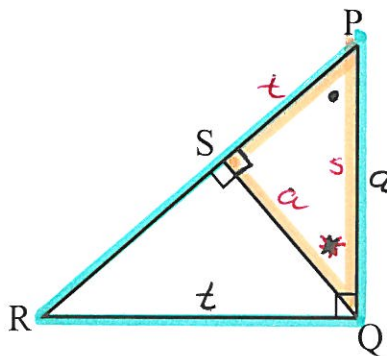
(a) $\sin A = \frac{t}{s} = \frac{BC}{AC}$ ✓ (2)

(b) $\cot C = \frac{a}{t} = \frac{BC}{AB}$ ✓ (2)

(c) $\cos C = \frac{a}{s} = \frac{BC}{AC}$ ✓ (2)

1.2 (a) $\tan P$ in $\triangle PQR$

(b) $\sin Q$ in $\triangle PQS$



(4)

(a) $\tan P = \frac{t}{a} = \frac{RQ}{PQ}$ ✓ (2)

(b) $\sin Q = \frac{t}{s} = \frac{PS}{PQ}$ ✓ (2)

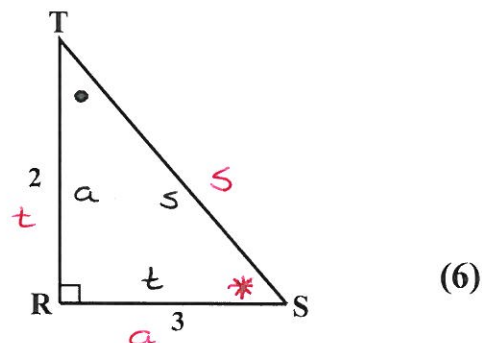
Vraag 2: [13]

Bereken die numeriese waarde van elk van die volgende:

2.1 (a) TS

(b) cosec T

(c) tan S



$$\begin{aligned} \text{(a) } TS^2 &= TR^2 + RS^2 \quad [\text{Pythagoras}] \\ &= (2)^2 + (3)^2 \\ &= 4 + 9 \end{aligned}$$

$$TS^2 = 13$$

$$TS = \sqrt{13}$$

$$\text{(b) } \operatorname{cosec} T = \frac{s}{t} = \frac{TS}{RS} = \frac{\sqrt{13}}{3}$$

$$\text{(c) } \tan S = \frac{t}{a} = \frac{TR}{RS} = \frac{2}{3}$$

2.2 P(12; y) en OP = 13

Bereken:

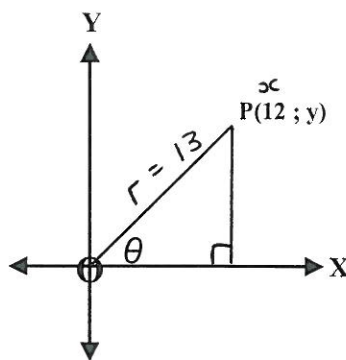
(a) y

(b) sin θ

(c) watter funksie, in terme van θ , deur die verhouding

$\frac{12}{13}$ voorgestel sal word.

(7)



$$\text{(a) } r^2 = x^2 + y^2 \quad [\text{Pythagoras}]$$

$$(13)^2 = (12)^2 + y^2$$

$$\therefore y^2 = 169 - 144$$

$$y^2 = 25$$

$$y = 5$$

$$\text{(b) } \sin \theta = \frac{y}{r} = \frac{5}{13}$$

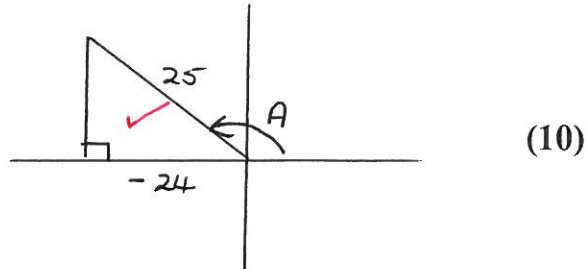
$$\text{(c) } \frac{12}{13} = \frac{x}{r} = \cos \theta$$

Vraag 3:[10]

As $25 \cos A + 24 = 0$ en $\tan A \leq 0$, bereken die volgende deur eers die gegewens op 'n skets voor te stel:

(a) $\tan A \cdot \sin A$

(b) $\sin^2 A - \cos^2 A$



$$25 \cos A = -24$$

$$\cos A = \frac{-24}{25} \left(\frac{x}{r} \right)$$

$$\therefore r^2 = x^2 + y^2 \quad (4)$$

$$(25)^2 = (-24)^2 + y^2$$

$$y^2 = 625 - 576 = 49$$

$$\therefore y = 7$$

(a) $\tan A \cdot \sin A$

$$= \frac{7}{-24} \times \frac{7}{25} = -\frac{49}{600} \quad (3)$$

(b) $\sin^2 A - \cos^2 A$

$$= \left(\frac{7}{25} \right)^2 - \left(\frac{-24}{25} \right)^2 \quad (3)$$

$$= \frac{49}{625} - \frac{576}{625} = -\frac{527}{625}$$

Vraag 4:[15]

Gebruik jou sakrekenaar om die volgende vraag te beantwoord:

4.1 As $P = 112^\circ$ en $Q = 63^\circ 18'$ bereken die volgende korrek tot twee desimale: (8)

(a) $\sin(P + Q)$

$$= \sin(112^\circ + 63^\circ 18')$$

$$= 0,0819... \quad (2)$$

$$\approx 0,08$$

(b) $\cos^2 P - \tan Q$

$$= (\cos 112^\circ)^2 - \tan 63^\circ 18'$$

$$= -1,8479... \quad (2)$$

$$\approx -1,85$$

(c) $3,2 \cot Q$

$$= 3,2 \cot 63^\circ 18'$$

$$= 1,6094... \quad (2)$$

$$\approx 1,61$$

(d) $\sqrt{\sin P - 4 \cos P}$

$$= \sqrt{(\sin 112^\circ - 4 \cos 112^\circ)}$$

$$= 1,5574... \quad (2)$$

$$\approx 1,56$$

4.2 Bereken x in elk van die volgende as $x \in [0^\circ ; 90^\circ]$:
[Korrekt tot een desimaal]

(7)

(a) $\sin x = 0,234$

$$x = 13,532\dots$$

$$x \approx 13,5^\circ \checkmark$$

①

(b) $2 \cos x = 0,2$

$$\cos x = \frac{0,2}{2} \checkmark$$

$$\cos x = 0,1 \checkmark$$

③

$$x \approx 84,3^\circ \checkmark$$

(c) $\tan(2x - 10^\circ) = 3$

$$2x - 10 = 71,565\dots \checkmark$$

$$2x = 81,565\dots \checkmark$$

③

$$x \approx 40,8^\circ \checkmark$$

Vraag 5:[2]

Vereenvoudig die volgende tot een trigonometrische verhouding, waar van toepassing:

5.1 $\frac{\sin A}{\cos A} = \tan A \checkmark$ ①

(1)

5.2 $\cos B \cdot \sec B = 1 \checkmark$ ①

(1)