Memorandum Sim

Gr10 Junie V2

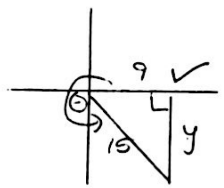
1.1.1 $\sin[2(129^\circ) + 51^\circ]$ ✓
$= -0,78$ ✓ (2)
Marks: ✓ subst; ✓ antw; $\not{g}$ ✓✓

1.1.2 $\tan^2(129^\circ - 51^\circ)$ ✓
$= 22,13$ ✓ (2)
Marks: Subst ✓; ✓ antw; $\not{g}$ ✓✓

1.2.1 $2\tan\theta = 2,9$
$\tan\theta = 1,45$ ✓
$\theta = 55,41^\circ$ ✓ (2)
Marks: ÷ 2 ✓; θ ✓

1.2.2 $\cos(3\theta + 10^\circ) = \tan 23^\circ$
$= 0,42....$ ✓
$3\theta + 10^\circ = 64,88...$ ✓
$\theta = 18,29^\circ$ ✓ (3)
[9]
Marks: 0,42.. ✓; 64,88 ✓; 18,29 ✓

2.1.1



$y^2 = 15^2 - 9^2$ (Pyth)
$y^2 = 144$
$y = -12$ ✓
(indien nie skets: $\frac{1}{2}$ ✓) (2)
Marks: Skets ✓; y ✓

2.1.2 $5\sin\theta + 9\tan^2\theta$
$= 5\left(-\frac{12}{15}\right) + 9\left(-\frac{12}{9}\right)^2$ ✓
$= -4 + 16 = 12$ ✓ (3)
Marks: sinθ ✓; $\tan^2\theta$ ✓; antw ✓

2.2 $\cos^2 45^\circ . \sin 90^\circ + \tan 60^\circ . \cos 30^\circ$
$\left(\frac{1}{\sqrt{2}}\right)^2 (1) + \sqrt{3} . \frac{\sqrt{3}}{2}$ ✓✓ ✓✓
$= \frac{1}{2} + \frac{3}{2} = 2$ ✓ (5)
[10]

3.1.1 $\cos 35^\circ = \frac{60}{AC}$ ✓
$AC = \frac{60}{\cos 35^\circ} = 73,25$ m ✓ (2)
Marks: cos 53° ✓; antw ✓

3.1.2 $\sin \angle ACD = \frac{53}{73,25}$ ✓
$\angle ACD = 46,35^\circ$ ✓ (2)
Marks: sin ∠C ✓; ∠ ✓

3.1.3 $\cos 46,35^\circ = \frac{CD}{73,25}$ ✓
$CD = 73,25 \cos 46,35^\circ = 50,56$ m ✓ (2)
(of Pyth) (of tan)
Marks: cos; CD ✓

3.2 $\cos 66^\circ = \frac{CD}{10}$ ✓
$CD = 10.\cos 66^\circ = 4,07$ m ✓
$\tan 72^\circ = \frac{30}{DB}$ ✓
$DB = \frac{30}{\tan 72^\circ} = 9,75$ m ✓
$CB = 4,07 + 9,75 = 13,82$ m ✓ (5)
13,81 ook reg [11]
Marks: cos 66° ✓; CD ✓; tan 72° ✓; DB ✓; CB ✓

4.1 $b = -1$, ✓ $c = -1$ ✓ (2) | b ✓ c ✓

4.2. 1 ✓ (1) | ant ✓

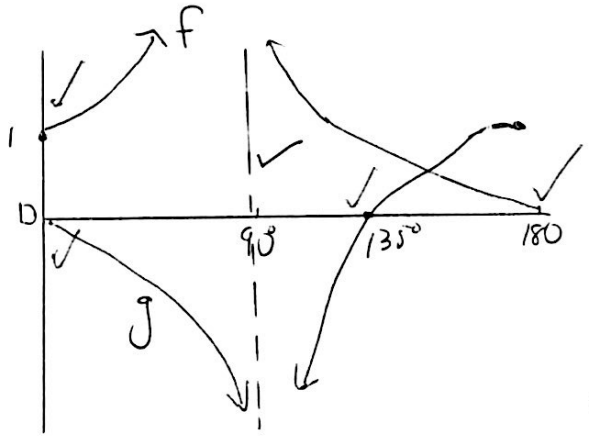
4.3 $0°$ ✓; $90°$; $360°$ ✓ (3) | 3 ant ✓✓

4.4 0 ✓ (1) | 0 ✓

4.5 $0° < x < 90°$ ✓ (2) | $0° \leq x \leq 90°$ ✓ (-1) N

4.6 $\sin x - 1 = -0,6$
$\sin x = 0,4$
$x = 23,58°$ ✓ (1) | x-waarde ✓

4.2



(5) | asimptoot ✓
f: y-as ✓ x-as ✓
g: y-as ✓ x-as ✓

4.2.1 $180°$ ✓ (1) | $180°$ ✓

4.2.2 $x \in K, x \neq 90°$ ✓ $x \in [0, 180]$ $x \neq 90$ (1) | $x \neq 90°$ ✓

4.2.3 $90° < x \leq 180°$ ✓ (2) | $90° < x$ ✓ $x \geq 180°$ ✓

4.2.4 $0°$ ✓; $180°$ ✓ (2) | $0°$ ✓; $180°$ ✓

[21]

5.1 $x = 60°$ ✓ (buite ∠ Δ) ✓ (2) | $60°$ ✓ rede ✓

5.2 Nee ✓ ooreenkomstige ∠e ✓ ≠ (2) | Nee ✓ rede ✓

5.3 $7^2 + 20^2 = 449$ ✓
$25^2 = 625$
$25^2 \neq 7^2 + 20^2$
✓ Nie reghoekig (Pyth) ✓ (3) | Nee ✓, rede ✓

[7]

6.1. In ΔABC en ΔDEC is:
(1) BC = CE (gegee) ✓
(2) AC = CD (gegee) ✓
(3) $\angle C_1 = \angle A_2$ (verw ∠e AD ∥ BC)
$= \angle D_1$ (AC = CD) ✓
$= \angle C_3$ (verwis. ∠e)
∴ ΔABC ≡ ΔDEC (SCS) ✓ (5) | ✓✓ 2 redes ✓ $\angle C_1 = \angle C$ ✓ volledige redes ≡ ✓ rede

6.2 ΔABC ||| ΔDEC (sye in dieselfde verhouding) ✓ (2) | Δe ✓ rede ✓

6.3.1. In ΔPQR en ΔTSR is:
(1) $\angle P = \angle T$ (verw ∠e PQ ∥ ST) ✓
(2) $\angle S = \angle Q$ (verw ∠e PQ ∥ ST) ✓
(3) $\angle R_1 = \angle R_2$ (regoorst. ∠e of binne ∠e Δ)
∴ ΔPQR ||| ΔTSR (∠∠∠) ✓ (4) | ✓✓ ✓ ||| ∠∠∠ skaalfaktor of verhoudings rede ✓

6.3.2. $\frac{PQ}{TS} = \frac{QR}{SR} = \frac{PR}{TR}$ ✓ ook skaalfaktor 2,5 ✓
ΔPQR ||| ΔTSR
$\frac{12}{x} = \frac{y}{10} = \frac{8}{20}$
$20y = 80$ ✓
$y = 4$cm (4) | x ✓ y ✓
$8x = 240$, $x = 30$cm ✓
[15]

7.1.1. $x+y+2x = 180°$ (ko-binne ∠e AB‖DC)

$3x+y = 180°$ (1)

$5y - x = 2x$ (teenoorst. ∠e ‖gram)

$-3x+5y = 0$ (2)

(1) + (2): $6y = 180°$

$y = 30°$

$x = 50°$

Vgl rede

Vgl + rede

y

x

OF $5y - x + x + y = 180°$ (ko-binne ∠e AD‖BC)

$6y = 180°$

$y = 30°$

$x+y+2x = 180°$ (ko-binne ∠e AB‖DC)

$x = 50°$ (5)

Vgl rede

y

Vgl + rede

x

7.1.2 $x = 50°$ (ko-binne ∠e AB‖DC)

$y = 62°$ (hoeklyne halveer ∠) of gelykbenige Δ (3)

x + rede

y

rede

7.1.3 $\angle BDC = 45°$ (hoeklyn halveer ∠)

$\angle DFE = 60°$ (binne ∠e Δ = 180°)

$\angle AFB = 60°$ (regoorst ∠e) (4)

∠BDC

rede

∠DFE + rede

∠AFB + rede

8. $2x+2y = 180°$ (gestrekte ∠)

$x+y = 90°$

$\therefore \angle BDF = 90°$

$\angle DFE = 90°$ (verw ∠e BD‖AE)

[Indien volledig uitgekom by ∠DFE = x+y, maar nie gradeer gelyk ¼] [4]

$2x+2y = 180°$

÷ 2

∠DFE = 90°

rede