Downloaded from SEE academy: www.seeacademy.co.za

FINAL

education

Department:
Education
PROVINCE OF KWAZULU-NATAL

MATHEMATICS P2

COMMON TEST

JUNE 2024

MARKING GUIDELINES

NATIONAL SENIOR CERTIFICATE

GRADE 10

SEE ACADEMY

MARKS: 50

These marking guidelines consist of 6 pages.

Copyright Reserved

Downloaded from SEE academy: www.seeacademy.co.za

GRADE 10
Marking Guideline

QUESTION 1

1.1	$M\left(\frac{x_1+x_2}{2};\frac{y_1+y_2}{2}\right)$ $M\left(\frac{6+(-5)}{2};\frac{6+3}{2}\right)$ $M\left(\frac{1}{2};\frac{9}{2}\right)$	✓A Formula ✓A Substitution ✓CA Answer (3)
1.2	$m_{WT}=\frac{y_2-y_1}{x_2-x_1}$ $=\frac{6-0}{6-(-3)}$ $=\frac{2}{3}$	✓A Formula ✓A Substitution ✓CA Answer (3)
1.3	$m_{RW}=\frac{y_2-y_1}{x_2-x_1}$ $=\frac{3-0}{-5-(-3)}$ $=\frac{-3}{2}$ $m_{WT}\times m_{RW}=\frac{2}{3}\times\frac{-3}{2}=-1$ ∴ RW is perpendicular to WT	✓A substitution ✓A $\frac{-3}{2}$ ✓A $\frac{2}{3}\times\frac{-3}{2}=-1$ (3)
1.4	$x=\frac{x_1+x_2}{2}$ $y=\frac{y_1+y_2}{2}$ $\frac{1}{2}=\frac{a-3}{2}$ $\frac{9}{2}=\frac{b+0}{2}$ $a=4$ b = 9 **OR** Sliding method $a=6-2$ $b=6+3$ $a=4$ $b=9$	✓CA $\frac{1}{2}=\frac{a-3}{2}$ ✓CA $a=4$ ✓CA $\frac{9}{2}=\frac{b+0}{2}$ ✓CA $b=9$ **ANSWER ONLY MAX: 2/4** (4)

SEE ACADEMY

Copyright Reserved

Downloaded from SEE academy: www.seeacademy.co.za

QUESTION 2

2.1.1	$x^2+y^2=r^2$ $x^2+5^2=13^2$ $x=\pm 12$ $x=-12$	✓A substitution ✓CA $x=-12$ (CA provided x is negative) (2)
2.1.2	$\cos\theta$ $=\frac{-12}{13}$	✓CA answer (1)
2.1.3	$12\left(\frac{\sin\theta}{\cos\theta}\right)$ $=12\left(\frac{\frac{5}{13}}{\frac{-12}{13}}\right)$ $=-5$	✓CA substitution ✓CA answer (2)
2.2.1	$\cos 2(21°)$ $=\cos 42°$ **NOTE: Penalise only here for rounding** $=0,74$	✓A answer (1)
2.2.2	$\sin(20°+21°)$ $=\sin 41°$ $=0,66$ **ANSWER ONLY: FULL MARKS**	✓A $(20°+21°)$ ✓A answer (2)
2.2.3	$\sec(20°)$ $=\frac{1}{\cos(20°)}$ $=1,06$ **ANSWER ONLY: FULL MARKS**	✓A $\frac{1}{\cos 20°}$ ✓A answer (2)
		[10]

SEE ACADEMY

Downloaded from SEE academy: www.seeacademy.co.za

QUESTION 3

3.1	$\left(\frac{1}{\sqrt{2}}\right)^2 - \frac{1}{2} + \tan 10° \frac{1}{\tan 10°}$ $= \frac{1}{2} - \frac{1}{2} + 1$ $= 1$	✓A $\left(\frac{1}{\sqrt{2}}\right)^2$ accept $\left(\frac{\sqrt{2}}{2}\right)^2$ ✓A $\frac{1}{2}$ ✓A $\frac{1}{\tan 10°}$ ✓CA answer (4)
3.2	$6\sin x = 1$ $\sin x = \frac{1}{6}$ $x = 9,6°$ **NOTE: do not penalise for rounding**	✓A $6\sin x = 1$ ✓A simplification ✓CA answer (3)
		[7]

QUESTION 4

4.1	In ΔMRC and ΔXCR $\hat{R}_1 = \hat{C}_2$ Alt ∠s. MR//CX. $\hat{C}_1 = \hat{R}_2$ Alt ∠s. MC//RX. CR = CR Common side. $\Delta MRC \equiv \Delta XCR$ (AAS) MR=XC MC=XR RC=CR **NOTE: Penalise ONCE if parallel lines are not stated**	✓A S/R ✓A S/R ✓A $\Delta MRC \equiv \Delta XCR$ …(AAS) ✓A conclusion (4)
4.2.1	$8x - 16° = 5x + 5°$ opp ∠s of parm $3x = 21°$ $x = 7°$	✓A S/R ✓A $3x = 21°$ ✓CA x-value (CA provided x is positive) (3)
4.2.2	$\hat{D} = \hat{B}$ opp ∠s of parm $\hat{B} + \hat{D} + \hat{A} + \hat{C} = 360°$ Sum ∠s of quad $2\hat{B} + 80° = 360°$ $2\hat{B} = 280°$ $\hat{B} = 140°$	✓A S/R ✓A S/R ✓CA S ✓CA answer

SEE ACADEMY

Downloaded from SEE academy: www.seeacademy.co.za

	OR $\hat{C} = 8(7°) - 16°$ $\hat{C} = 40°$ $\hat{B} + \hat{C} = 180°$ Co-int $\angle$s. AB DC $\hat{B} = 180° - 40°$ $\hat{B} = 140°$	✓CA 40° ✓S✓R ✓CA answer (4)
		[11]

QUESTION 5

5.1.1	$\hat{V}_1 + 30° = 100°$ Ext $\angle$ of Δ $\hat{V}_1 = 70°$ **OR** $\hat{R}_1 = 80°$ $\angle$s on a str. line $\hat{V}_1 = 70°$ sum of Δ	✓A S/R ✓A answer (2) ✓A S/R ✓A answer
5.1.2	$\hat{S}_1 = \hat{V}_2$ $\angle$s opp = sides $\hat{S}_1 + \hat{V}_2 + V\hat{R}S = 180°$ Sum $\angle$s Δ $2\hat{S}_1 + 100° = 180°$ $2\hat{S}_1 = 80°$ $\hat{S}_1 = 40°$ **OR** $\hat{R}_1 + V\hat{R}S = 180°$ $\angle$s on a str line $\hat{R}_1 = 80°$ $\hat{S}_1 = \hat{V}_2$ $\angle$s opp = sides $\hat{S}_1 + \hat{V}_2 = \hat{R}_1$ Ext $\angle$ of Δ $2\hat{S}_1 = 80°$ $\hat{S}_1 = 40°$	✓A S/R ✓A S ✓A answer (3) ✓A $\hat{R}_1 = 80$ ✓A S/R ✓A answer

SEE ACADEMY

Downloaded from SEE academy: www.seeacademy.co.za

5.2	ES = ER	diagonals of rectangle	✓A S/R
	$\hat{R}_2 = t$	∠s opp =sides	
	$\hat{E}_2 + \hat{R}_2 + E\hat{S}R = 180°$	Sum ∠ of Δ	
	$\hat{E}_2 + t + t = 180°$		
	$\hat{E}_2 = 180° - 2t$		✓A $\hat{E}_2$
	$\hat{E}_4 = \hat{E}_2$	Vert opp ∠s	✓A S/R
	$\hat{E}_4 = 180° - 2t$		✓A answer
	OR		(4)
	$\hat{Q}_1 = t$	Alt ∠s PS∥QR	✓A S/R
	$\hat{P}_1 = t$	∠s opp = sides	✓A S/R
	$\hat{E}_4 + \hat{Q}_1 + \hat{P}_1 = 180°$	Sum ∠s Δ	✓A S
	$\hat{E}_4 = 180° - 2t$		✓A answer
			[9]

TOTAL: 50

SEE ACADEMY