SENIOR SECONDARY IMPROVEMENT PROGRAMME 2013

education
Department: Education
GAUTENG PROVINCE

GRADE 12

MATHEMATICS

LEARNER HOMEWORK SOLUTIONS

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LEARNER HOMEWORK SOLUTIONS

SOLUTIONS TO HOMEWORK: SESSION 15
TOPIC: REVISION OF ANALYTICAL GEOMETRY (GRADE 11)

1(a)	$m_{BC} = \frac{2+2}{9-1}$ $m_{BC} = \frac{1}{2}$ $y+2 = \frac{1}{2}(x-1)$ $y = \frac{1}{2}x - 2\frac{1}{2}$	✓ $m_{BC} = \frac{1}{2}$ ✓ $y+2 = \frac{1}{2}(x-1)$ ✓ $y = \frac{1}{2}x - 2\frac{1}{2}$ (3)
1(b)	$m = -2$ $y-4 = -2(x+1)$ $y = -2x+2$	✓ $m = -2$ ✓ $y-4 = -2(x+1)$ ✓ $y = -2x+2$ (3) **[6]**
2	$m_{AB} = \frac{4+2}{-5+7}$ $m_{AB} = 3$ $\tan\alpha = 3$ $\therefore \alpha = 71{,}57°$ $5x+y+5 = 0$ $y = -5x-5$ $m = -5$ $\tan\beta = -5$ $\beta = 180° - 78{,}69°$ $\beta = 101{,}31°$ $\theta = 101{,}31° - 71{,}57°$ $\theta = 29{,}74°$	✓$m_{AB} = 3$ ✓ $\alpha = 71{,}57°$ ✓$m = -5$ ✓$\beta = 180° - 78{,}69°$ ✓$\theta = 101{,}31° - 71{,}57°$ ✓$\theta = 29{,}74°$ **[6]**
3(a)	$\left(\frac{-1+5}{2}; \frac{3-7}{2}\right)$ $(2;-2)$	✓$\left(\frac{-1+5}{2}; \frac{3-7}{2}\right)$ ✓$(2;-2)$ (2)
3(b)	$d_{PQ} = \sqrt{(-1-5)^2 + (3+7)^2}$ $d_{PQ} = 11{,}66$	✓$d_{PQ} = \sqrt{(-1-5)^2 + (3+7)^2}$ ✓ $d_{PQ} = 11{,}66$ (2)
3(c)	$m_{PQ} = \frac{-7-3}{5+1}$ $m_{PQ} = \frac{-5}{3}$ $\therefore new\ gradient = \frac{3}{5}$ $y+2 = \frac{3}{5}(x-2)$ $y = \frac{3}{5}x - \frac{16}{5}$	✓$m_{PQ} = \frac{-5}{3}$ ✓$\therefore new\ gradient = \frac{3}{5}$ ✓ $y+2 = \frac{3}{5}(x-2)$ ✓ $y = \frac{3}{5}x - \frac{16}{5}$ (4) **[8]**