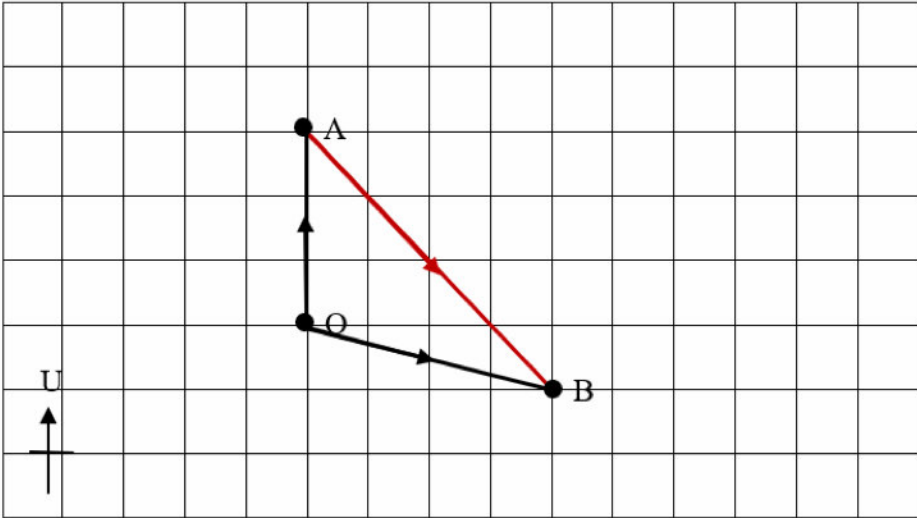
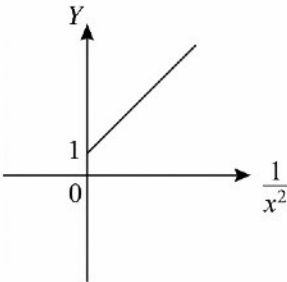
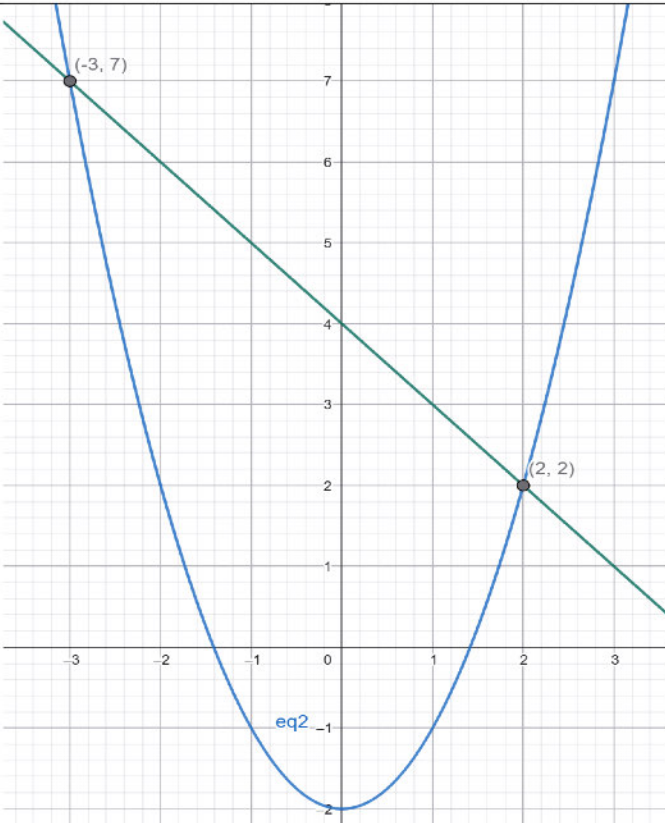
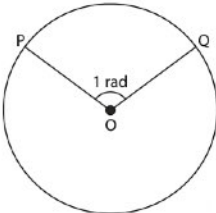




N O	SKEMA	MARKAH
1	(a) $x = \frac{1(3) + 4(8)}{4 + 1}$ ATAU $y = \frac{1(2) + 4(7)}{4 + 1}$	K1
	$x = 7$	N1
	$y = 6$	
	(b) $\frac{PS}{PT} = \frac{2}{1}$ ATAU setara	P1
	$\frac{\sqrt{(x - (-1))^2 + (y - 4)^2}}{\sqrt{(x - 4)^2 + (y - (-1))^2}} = \frac{2}{1}$ ATAU setara NOTA: Guna rumus jarak	K1
	$x^2 + y^2 - 10x + 4y + 21 = 0$	N1
		5
2	(a) Kuantiti vektor , kuantiti ini mempunyai magnitud dan arah .	P1
	(b) 	
	• Garisan perlu ada anak panah (arah) • Mesti menggunakan alat tepi lurus	P1
	$\vec{AB} = 4\hat{i} - 4\hat{j}$	N1
	(c) $ \vec{AB} = \sqrt{4^2 + (-4)^2}$	K1
	$ \vec{AB} = 4\sqrt{2} // 5.657$ ** tidak terima $\sqrt{32}$	N1
	Tenggara // 135°	N1
	• Tanda vektor mesti digunakan sekurang-kurangnya sekali Jika tidak, SS-1	
		6
3	(a) (i) $a = \frac{40}{3}$	P1

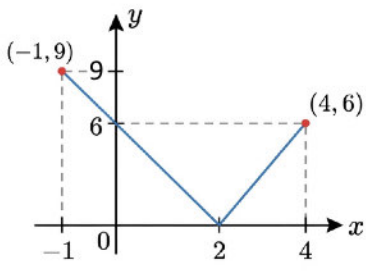
		<i>NMA</i>	
	(ii)	**seen $2^{1+2n} = 2^{13}$ $1 + 2n = 13$ kaedah alternatif: Guna log	K1
		$n = 6$	N1
	(b)	$S_{\infty} = \frac{0.12}{1 - \left(\frac{0.0012}{0.12}\right)}$ $m = 169$	NOTA: $\left(\frac{0.0012}{0.12}\right)$ atau setara dilihat K1
			N1
			5
4	(a)	Tukar persamaan tak linear ke linear $yx^2 = 2\left(\frac{1}{x}\right) + 1$ NMA	P1
		$2X + 1 = 0$ DAN selesaikan untuk X	K1
		Kecerunan, $m=2$ DAN pintasan- $X=-\frac{1}{2}$	N1
	(b)	 NOTA: 1. O mesti dilabel 2. semua garisan mesti dilukis dengan alat tepi lurus 3. *1 mesti dilabel 4. Label Paksi-Y boleh terima Y atau yx^2 sahaja 5. Paksi-X hanya terima $\frac{1}{x^2}$ 6. Terima graf dengan kecerunan negatif	N1
			4
5	(a)	$(-2q)^2 - 4(2p)(6) = 0$ $p = \frac{q^2}{12}$	NOTA: Guna rumus $b^2 - 4ac = 0$ K1
			N1
	(b)	$p + q = 7$ ATAU $pq = 10$ HTP/SOR = 11 ATAU HDP/POR = 28	P1 K1
		$x^2 - \text{*(11)}x + \text{*(28)} = 0$	K1
		$x^2 - 11x + 28 = 0$ NMA	N1
			6

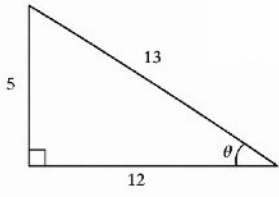


6	<table><tr><th>x</th><th>-3</th><th>-2</th><th>-1</th><th>0</th><th>1</th><th>2</th><th>3</th></tr><tr><td>$4 = x + y$</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td></tr><tr><td>$x^2 - y = 2$</td><td>7</td><td>2</td><td>-1</td><td>-2</td><td>-1</td><td>2</td><td>7</td></tr></table>		x	-3	-2	-1	0	1	2	3	$4 = x + y$	7	6	5	4	3	2	1	$x^2 - y = 2$	7	2	-1	-2	-1	2	7	P1 P1
x	-3	-2	-1	0	1	2	3																				
$4 = x + y$	7	6	5	4	3	2	1																				
$x^2 - y = 2$	7	2	-1	-2	-1	2	7																				
	 Titik persilangan : (-3, 7) dan (2, 2) NOTA N1³: 1. O mesti dilabel 2. semua garisan mesti dilukis dengan alat tepi lurus 3. skala mesti seragam pada kedua-dua paksi 4. Label Paksi-y dan Paksi-x mesti betul		N1 – Plot dan lukis graf garis lurus N1 – Plot dan lukis graf kuadratik dengan betul N1 ³ N1																								
			6																								
7	(a)	 Lukis dan label	P1																								
	(b)	$1.8h$ $PA^2 = h^2 + h^2 - 2(h)(h) \cos 103.12^\circ$ NOTA Terima 103.12° jika $1.8 \times \frac{180}{\pi}$ dilihat RUJUKAN: $PA = 1.567h$ $1.8h + *1.567h$ $3.367h$	P1 K1 K1 N1																								
			5																								



8	(a)	$\frac{-(x-3)}{(x-3)(x+3)}$		K1	
		$-\frac{1}{6}$		N1	
	(b)	$\lim_{\delta x \rightarrow 0} \frac{(3(x+\delta x)^2 + 6(x+\delta x) - 4) - (3x^2 + 6x - 4)}{\delta x}$		K1	
		$6x + 6$		N1	
				4	
9	$\int_1^0 7f(x)dx - \int_1^0 4x dx$ ATAU $7 \int_1^0 f(x)dx$			P1	
	$-7 \int_0^1 f(x)dx$ DAN $[2x^2]_1^0$		NOTA: Untuk pengamiran, kuasa naik 1. Abaikan 2.	K1	
	Ganti $\int_0^1 f(x)dx = 5$ DAN Gantikan had pengamiran 0 dan 1		RUJUKAN: $-7(5) - [(2(0)^2 - 2(1)^2)]$	K1	
	-33			N1	
				4	
10	(a)	$5^{2x} \div 5^{2y}$ DILIHAT	GUNA: $a^{m-n} = a^m \div a^n$	P1	
		Ganti $5^{2x} = h$ DAN $5^y = k$	RUJUKAN: $\frac{h}{k^2} = 4 - h$	K1	
		$h = \frac{4k^2}{(1+k^2)}$			N1
	(b)	$(5 - \sqrt{3})^2$ DILIHAT			P1
		$(5 - \sqrt{3})^2(5 - \sqrt{3})$ DAN SETARA	NOTA: Cari luas	P1	
		$28(5) - 28\sqrt{3} - 50\sqrt{3} + 10(3)$	NOTA: Kembangan sekurang-kurangnya 4 sebutan	K1	
		$170 - 78\sqrt{3}$			N1
				7	
11	(a)	diskret DAN boleh dibilang.			P1
	(b)	$P\left(Z > \frac{75-\mu}{\sigma}\right) = 0.1$ ATAU $P\left(Z > \frac{3.5-\mu}{\sigma}\right) = 0.252$			P1
		$z = 1.282$ ATAU $z = -0.674$			K1
		$\frac{75-\mu}{\sigma} = 1.282$ ATAU $\frac{40-\mu}{\sigma} = 0.674$			K1
		Selesaikan persamaan serentak	NOTA: -Hapus μ atau σ	K1	

		$\sigma = 17.89$ DAN $\mu = 52.07$	N1
			6
12	(a)	(i) 720 NMA	N1
		(ii) $4! \times \frac{4!}{3!}$	NOTA: Terima nPr K1
		96	N1
	(b)	$({}^5C_2 \times {}^3C_1)$ ATAU $({}^5C_1 \times {}^3C_2)$	K1
		$({}^5C_2 \times {}^3C_1) + ({}^5C_1 \times {}^3C_2)$	NOTA: Terima 2 kes ini sahaja K1
		45	N1
			6
13	(a)	$f^{-1}(x) = \frac{x+6}{3}$	K1
		$g(x) = \frac{3}{4 * (\frac{x+6}{3}) - 5}$	NOTA: Lakukan $gf[f^{-1}(x)]$ K1
		$g(x) = \frac{9}{4x+9}, x \neq -\frac{9}{4}$	NOTA: $x \neq -\frac{9}{4}$ wajib ada N1
	(b)	 NOTA untuk P1² 0, 2, 6 mesti dilabel - semua garisan mesti dilukis dengan alat tepi lurus - Graf mesti pantul pada x=2 - Graf dalam domain $-1 \leq x \leq 4$ (-1,9) dan (4,6) mesti dilabel ATAU dilukis unjuran (mesti ada nombor pada paksi) - Paksi-x dan paksi-y mesti dilabel	P1 Bentuk V P1²
			$0 \leq f(x) \leq 9$ N1
			(ii) $3x - 6 > 3$ K1
			$3 < x \leq 4$ N1
			8
14	(a)	$(4\underline{i} + 5\underline{j})t$ ATAU $4t\underline{i} + 5t\underline{j}$	K1
		$(16\underline{i} + 24\underline{j}) + (4t\underline{i} + 5t\underline{j})$	K1
		$(16 + 4t)\underline{i} + (24 + 5t)\underline{j}$	NOTA: MESTI dalam bentuk $ai + bj$ ATAU vektor lajur $\begin{pmatrix} a \\ b \end{pmatrix}$ N1
		$//\left(\frac{16+4t}{24+5t}\right)$	
	(b)	$6t = 16 + 4t$ ATAU $8t = 24 + 5t$	NOTA: K1

		$s_Q = s_P$ $6t\mathbf{i} + 8t\mathbf{j} = (16 + 4t)\mathbf{i} + (24 + 5t)\mathbf{j}$	
		$t = 8$	N1
	(c)	$\overrightarrow{OP} = 6(8)\mathbf{i} + 8(8)\mathbf{j}$ ATAU $\overrightarrow{OQ} = (16 + 4(8))\mathbf{i} + (24 + 5(8))\mathbf{j}$	K1
		$\sqrt{48^2 + 64^2}$	K1
		80.00	N1
			8
	15	(a)	N1
		$\sin \theta = \frac{5}{13}$ NOTA: segi tiga WAJIB dilukis dan dilabel. 	
		(b)	K1
		$2\left(\frac{5}{13}\right)\left(\frac{12}{13}\right)$ $\frac{120}{169}$	N1
		$\left(\frac{12}{13}\right)^2 - \left(\frac{5}{13}\right)^2$ NOTA: Guna rumus $\cos 2\theta = \cos^2 \theta - \sin^2 \theta$	K1
		$\frac{119}{169}$	N1
		(c)	K1
		$\frac{1428}{2197}$ ATAU $\frac{600}{2197}$	K1
		$\frac{1428}{2197} - \frac{600}{2197}$	K1
		$\frac{828}{2197}$ NMA	N1
			8



SERTAI TELEGRAM @exercise_students



PEPERIKSAAN PERCUBAAN SPM 2026
MATEMATIK TAMBAHAN (KERTAS 2) – SET 2
SKEMA PEMARKAHAN

NO. SOALAN	SKEMA	MARKAH
1	Membentuk mana-mana persamaan $2x + y + z = 40.50 \quad \dots\dots\dots 1$ $3x + 2y + z = 65.50 \quad \dots\dots\dots 2$ $x + 3y + 2z = 66 \quad \dots\dots\dots 3$	P1
	Ketiga-tiga persamaan betul	P1
	Hapuskan anu pertama dengan menggunakan kaedah penggantian atau penghapusan Persamaan 2 – 1 $x + y = 25 \quad \dots\dots\dots 4$	K1
	Hapuskan anu kedua dengan menggunakan kaedah penggantian atau penghapusan Persamaan 2 $\times$ 2 $6x + 4y + 2z = 131 \quad \dots\dots\dots 5$ $x + 3y + 2z = 66 \quad \dots\dots\dots 3$ persamaan 5 – 3 $5x + y = 65 \quad \dots\dots\dots 6$ $x + y = 25 \quad \dots\dots\dots 4$ persamaan 6 – 4 $4x = 40$ $x = 10$ $y = 15 \quad \quad \quad z = 5.50$	N1 N1 N1
2	(a) $f(x) = 3[x^2 - \frac{5}{3}x - \frac{8}{3}]$	
	$f(x) = 3[x^2 - \frac{5}{3}x + \left(\frac{-5}{3}\right)^2 - \left(\frac{-5}{3}\right)^2 - \frac{8}{3}]$	K1
	$f(x) = 3[\left(x - \frac{5}{6}\right)^2 - \left(\frac{-5}{3}\right)^2 - \frac{8}{3}]$	K1
	$f(x) = 3[\left(x - \frac{5}{6}\right)^2 - \frac{121}{36}]$	
	$f(x) = 3\left(x - \frac{5}{6}\right)^2 - \frac{121}{12}$	N1
	Paksi simetri $x = \frac{5}{6}$	N1

$$2x + y + z = 40.50 \quad \dots\dots\dots 1$$

$$3x + 2y + z = 65.50 \quad \dots\dots\dots 2$$

$$x + 3y + 2z = 66 \quad \dots\dots\dots 3$$

Ketiga-tiga persamaan betul

Hapuskan anu pertama dengan menggunakan kaedah penggantian atau penghapusan

Persamaan 2 – 1

$$x + y = 25 \quad \dots\dots\dots 4$$

Hapuskan anu kedua dengan menggunakan kaedah penggantian atau penghapusan

Persamaan 2×2

$$6x + 4y + 2z = 131 \quad \dots\dots\dots 5$$

$$x + 3y + 2z = 66 \quad \dots\dots\dots 3$$

persamaan 5 – 3

$$5x + y = 65 \quad \dots\dots\dots 6$$

$$x + y = 25 \quad \dots\dots\dots 4$$

persamaan 6 – 4

$$4x = 40$$

$x = 10$

$$y = 15 \qquad z = 5.50$$

$$z = 5.50$$

2

(a)

$$f(x) = 3\left[x^2 - \frac{5}{3}x - \frac{8}{3}\right]$$

$$f(x) = 3\left[x^2 - \frac{5}{3}x + \left(\frac{-\frac{5}{3}}{2}\right)^2 - \left(\frac{-\frac{5}{3}}{2}\right)^2 - \frac{8}{3}\right]$$

$$f(x) = 3\left[\left(x - \frac{5}{6}\right)^2 - \left(\frac{\frac{-5}{3}}{2}\right)^2 - \frac{8}{3}\right]$$

$$f(x) = 3\left[\left(x - \frac{5}{6}\right)^2 - \frac{121}{36}\right]$$

$$f(x) = 3\left(x - \frac{5}{6}\right)^2 - \frac{121}{12}$$

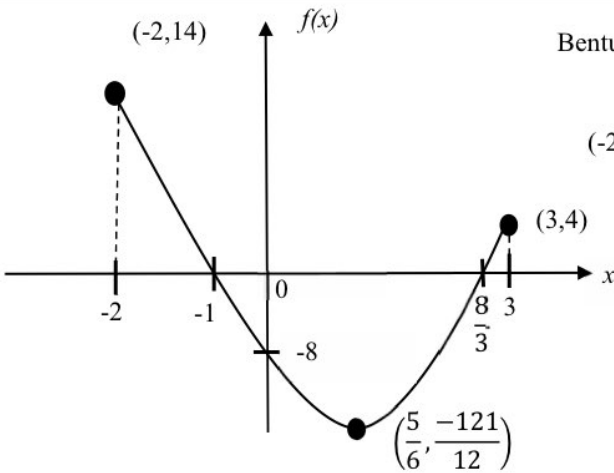
Paksi simetri $x = \frac{5}{6}$

K1

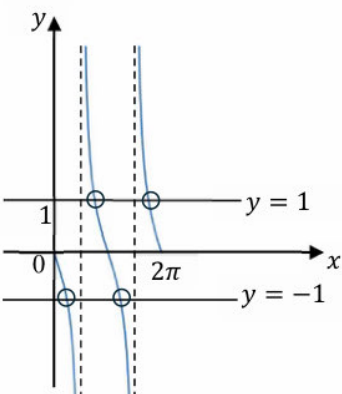
K1

N1

N1

2	(b)	 Bentuk U, paksi-paksi guna alat tepi lurus $(-2, 14)$, $(3, 4)$, titik asalan & $\left(\frac{5}{6}, -\frac{121}{12}\right)$ Graf dalam domain $-2 \leq x \leq 3$.	P1 P1
3	(a)	(i) Hukum segitiga $\overrightarrow{PR}$ atau $\overrightarrow{SQ}$ $\overrightarrow{PR} = \overrightarrow{PQ} + \overrightarrow{QR}$ $= \underline{x} + 4\underline{y}$ (ii) $\overrightarrow{SQ} = \overrightarrow{SR} + \overrightarrow{RQ}$ $= 5\underline{PQ} + (-4\underline{y})$ $= 5\underline{x} - 4\underline{y}$	P1 N1 N1
	(b)	(i) $\overrightarrow{RE} = h\overrightarrow{RP}$ $= h(-\underline{x} - 4\underline{y})$ $= -h\underline{x} - 4h\underline{y}$ (ii) $\overrightarrow{RE} = \overrightarrow{RS} + \overrightarrow{SE}$ $= -5\underline{x} + k\overrightarrow{SQ}$ $= -5\underline{x} + k(5\underline{x} - 4\underline{y})$ $= (-5 + 5k)\underline{x} - 4k\underline{y}$	N1 K1 N1
	(c)	$-4h = -4k$ $\frac{h}{k} = \frac{1}{1}$ $h : k = 1 : 1$	K1 N1



4	(a)	$V = \pi(5 - h)^2(h)$ $= \pi h^3 - 10\pi h^2 + 25\pi h$	
		$\frac{dV}{dh} = 3\pi h^2 - 20\pi h + 25\pi$ $3\pi h^2 - 20\pi h + 25\pi = 0$ $\pi(h - 5)(3h - 5) = 0$ $h = 5, h = \frac{5}{3}$ Faktorkan dan = 0	K1 K1
		$\frac{d^2V}{dh^2} = 6\pi h - 20\pi$ $h = 5, \frac{d^2V}{dh^2} = 6\pi(5) - 20\pi = 10\pi > 0, V_{min}$ $h = \frac{5}{3}, \frac{d^2V}{dh^2} = 6\pi(\frac{5}{3}) - 20\pi = -10\pi < 0, V_{max}$ $h = \frac{5}{3}$ beza, ganti r kedua-dua dan nyatakan V_{min} dan V_{max}	K1 N1
	(b)	$\frac{dh}{dt} = \frac{dh}{dV} \times \frac{dV}{dt}$ $\frac{dh}{dt} = \frac{1}{3\pi(\frac{1}{2})^2 - 20\pi(\frac{1}{2}) + 25\pi} \times 9\pi$ $\frac{dh}{dt} = \frac{4}{7} @ 0.5714$	K1 N1
5	(a)	$\frac{2 \sin x \cos x}{1 + (2 \cos^2 x - 1)}$ $\frac{\sin x}{\cos x}$ $\tan x$	K1 N1
	(b) (i)	 Bentuk graf tangen, paksi-paksi guna alat tepi lurus, 2 asimptot 1 kitaran, asalan O dilabel, untuk $0 \leq x \leq 2\pi$, 2π mesti dilabel Graf negatif	P1 P1 P1

5	(b)	(ii) $y = 1$ dan $y = -1$ Lukis garis lurus $y = 1$ dan $y = -1$ 4 bilangan penyelesaian	P1 K1 N1
6	(a)	$2\pi - \frac{5}{9}\pi$ $= (\frac{1}{2})(12^2)(2\pi - \frac{5}{9}\pi)$ $= 326.768$ Luas laluan pejalan kaki $= (\frac{5}{8})(326.768)$ ATAU setara 204.23	K1 K1 K1 K1 N1
	(b)	$(\frac{3}{8})(326.768)$ ATAU setara $4(122.538) = 490.152$ 490 pokok	K1 K1 N1
	(c)	$490 \times \text{RM}8$ $= \text{RM}3,921.22$	N1
7	(a)	$T_1 = S_1$ $S_1 = 4(1)^2 + 1$ $= 4 + 1$ $= 5$	N1
	(b)	$S_{12} = 4(12)^2 + 12 = 576 + 12 = 588$ ATAU $S_{11} = 4(11)^2 + 11 = 484 + 11 = 495$ Sebutan ke-12 $T_{12} = S_{12} - S_{11}$ $T_{12} = *588 - *495$ $= 93$	K1 K1 N1
	(c)	Hasil tambah sebutan ke-6 hingga ke-12 $S_5 = 4(5)^2 + 5 = 100 + 5 = 105$ $T_6 + \dots + T_{12} = S_{12} - S_5$ $= *588 - *105$ $= 483$	K1 N1

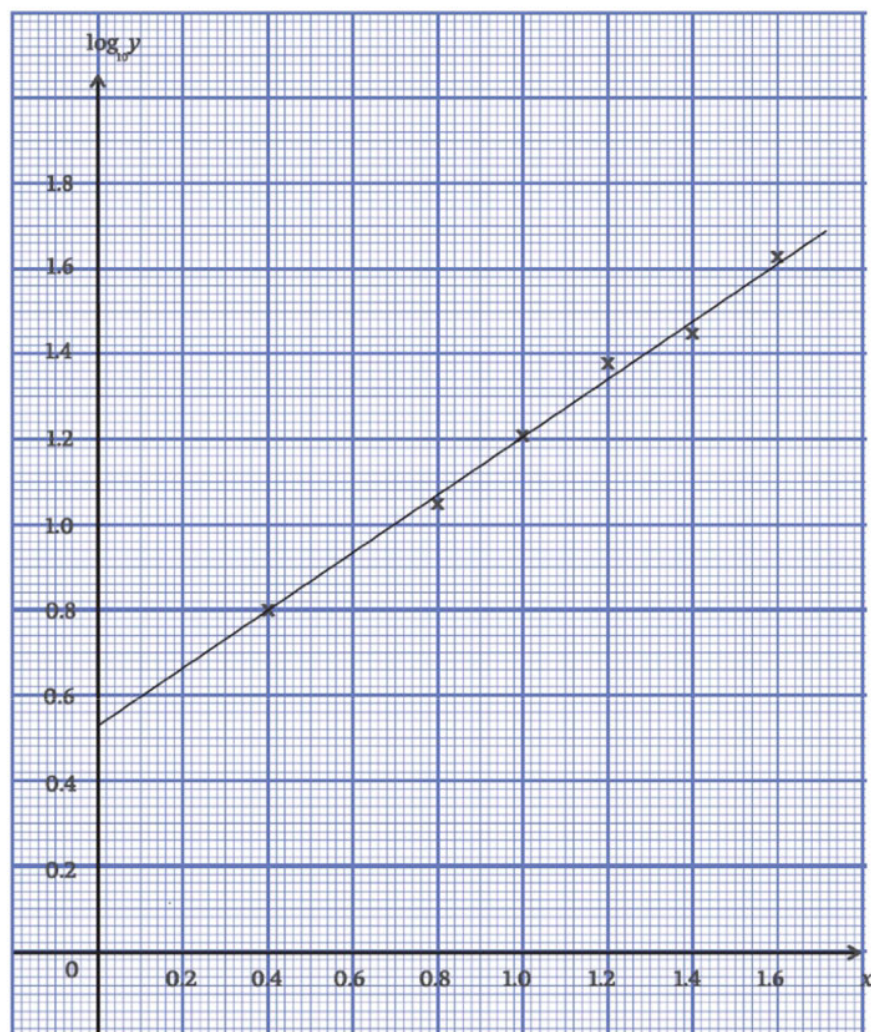
8	(a)	Beza $y = x^2 + 1 \Rightarrow \frac{dy}{dx} = 2x$ DAN Guna $m_T \times m_N = -1 \Rightarrow m_N = -\frac{1}{4}$ Gantikan (2, 5) ke dalam $y = -\frac{1}{4}x + c$ DAN selesaikan untuk c ATAU Gantikan (2, 5) dalam $(y - y_1) = -\frac{1}{4}(x - x_1)$	K1
		$y = -\frac{x}{4} + \frac{11}{2} // x + 4y - 22 = 0$	N1
	(b)	Cari luas poligon , $A_1 = \frac{1}{2}(-\frac{11}{2} + 5)(2)$ ATAU Kamir $\int^* \left(-\frac{x}{4} + \frac{11}{2}\right)$ DAN guna had $\int_0^2$ $A_1 = \frac{21}{2}$	K1
		Kamir $\int x^2 + 1$ terhadap $x \Rightarrow A_2 = \frac{x^3}{3} + x$	K1
		Guna had $\int_0^2$ ke dalam A_2 $A_2 = \frac{14}{3}$	
		$A_1 - A_2$	K1
		$\frac{35}{6}$	N1
	(c)	Kamir $\int \left(-\frac{1}{4}x + \frac{11}{2}\right)^2$ terhadap x DAN guna had $\int_0^2$ ke dalam *kamiran $V_1 = \frac{331}{6}\pi // 55\frac{1}{6}\pi // 55.167\pi$ ATAU Kamir $\int (x^2 + 1)^2$ terhadap x DAN guna had $\int_0^2$ ke dalam *kamiran $V_2 = \frac{206}{15}\pi // 13\frac{11}{15}\pi // 13.73\pi$	K1
		$\frac{1}{2}(V_1 - V_2)$	K1
		$\frac{1243}{60}\pi$	N1
9	(a)	(i) $\mu = 9 \times 0.4$ $\mu = 3.6 \approx 4$	N1
		(ii) $P(X \geq 8)$ ATAU $1 - P(X < 8)$ ATAU $P(X = 8) + P(X = 9)$ $P(X \geq 8) = {}^9C_8(0.4)^8(0.6)^1 + {}^9C_9(0.4)^9(0.6)^0$ $= 0.003801$	K1 K1 N1

9	(b)	(i) $P(X \leq 380) = P\left(Z \leq \frac{380-350}{100}\right)$ $= P(Z \leq 0.3)$ $= 1 - P(Z > 0.3)$ $= 1 - 0.3821$ $= 0.6179$	P1 K1 N1														
		(ii) $P(X > m) = 0.42$ $P\left(Z > \frac{m-350}{100}\right) = 0.42$ $\frac{m-350}{100} = 0.202$ $m = 370.2 \text{ g}$	P1 N1														
10	(a)	$\left(\frac{x(1) + 4(2)}{2 + 1}, \frac{y(1) + 2(2)}{2 + 1}\right) = (0, 1)$															
		$\frac{x(1)+4(2)}{2+1} = 0, \frac{y(1)+2(2)}{2+1} = 1$	K1														
		$x = -8, y = -1$															
		$A(-8, -1)$	N1														
	(b)	(i) $m_{AB} = \frac{2-(-1)}{4-(-8)} = \frac{1}{4}$ $m_{AB} \times m_{CD} = -1$ $\frac{1}{4} \times m_{CD} = -1$ $m_{CD} = -4$	K1 K1														
		$y = -4x + 1$ ATAU setara	N1														
		(ii) Selesaikan / Solve $y = -4x + 1$ dan $y = 3x + 8$	K1														
		$3x + 8 = -4x + 1$ $x = -1, y = 5$															
		$C(-1, 5)$	N1														
		(c)	$2AP = PB$ $\sqrt{(x - (-8))^2 + (y - (-1))^2}$ ATAU $\sqrt{(x - 4)^2 + (y - 2)^2}$ $2\sqrt{(x - (-8))^2 + (y - (-1))^2} = \sqrt{(x - 4)^2 + (y - 2)^2}$	K1 K1													
	$3x^2 + 3y^2 + 72x + 12y + 240 = 0$ $x^2 + y^2 + 24x + 4y + 80 = 0$	N1															
11	(a)	<table><tr><td>x</td><td>0.40</td><td>0.80</td><td>1.00</td><td>1.20</td><td>1.40</td><td>1.60</td></tr><tr><td>$\log_{10} y$</td><td>0.80</td><td>1.07</td><td>1.21</td><td>1.38</td><td>1.45</td><td>1.63</td></tr></table>	x	0.40	0.80	1.00	1.20	1.40	1.60	$\log_{10} y$	0.80	1.07	1.21	1.38	1.45	1.63	N1
	x	0.40	0.80	1.00	1.20	1.40	1.60										
$\log_{10} y$	0.80	1.07	1.21	1.38	1.45	1.63											
(b)	Rujuk pada graf (i) Paksi-paksi betul dan skala seragam dari titik pertama hingga titik terakhir sekurang-kurangnya satu titik diplot betul (ii) 6 titik diplot dengan betul (iii) Garis lurus penyuaian terbaik	K1 N1 N1															



11

(b)



- (c) (i) $\log_{10} y = 0.75$
 $y = 5.623$

N1

(ii)

$$\log_{10} y = x \log_{10}(q + 1) + \log_{10} p$$

$$\log_{10}(q + 1) = \frac{1.07 - 0.51}{0.8 - 0}$$

$$q = 4.012$$

P1

K1

N1

$$\log_{10} p = 0.51 \quad \text{baca dari graf}$$

$$p = 3.236$$

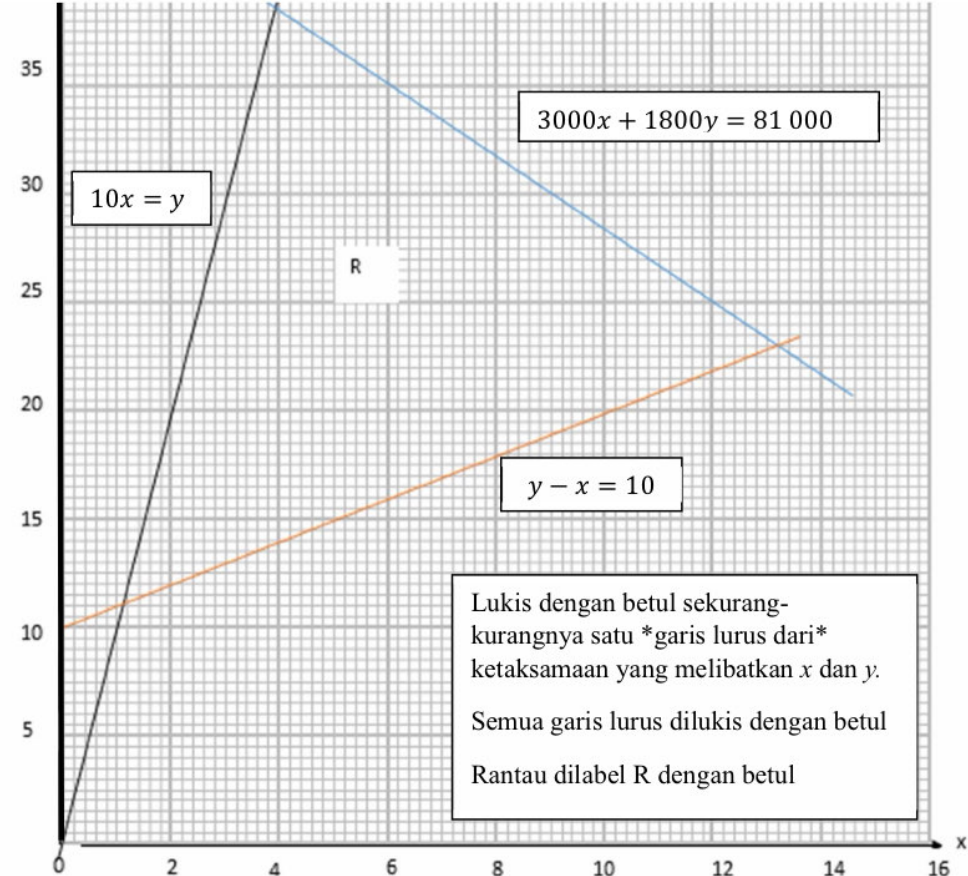
K1

N1



 SERTAI TELEGRAM @exercise_students

12	(a)	(i) $\frac{PR}{\sin 30^\circ} = \frac{8}{\sin 80^\circ}$ $PR = 4.062$	K1 N1
		(ii) $PN = \sqrt{8^2 + 6^2}$ $= 10$ ATAU $NR = \sqrt{7.634^2 + 6^2}$ $= 9.710$ $\frac{RO}{\sin 70^\circ} = \frac{8}{\sin 80^\circ}$ $= 7.634$ DAN $S = \frac{4.062 + 10 + 9.710}{2}$ $= 11.89$ Luas = $\sqrt{11.89(11.89 - 4.062)(11.89 - 10)(11.89 - 9.710)}$ $= 19.58$	P1 K1 K1 N1
	(b)	$\frac{\sin \angle RSN}{9.710} = \frac{\sin 18^\circ}{4.5}$ $\angle RSN = 138.18^\circ$ (cakah sahaja kerana panjang minimum) $\angle NRS = 180^\circ - 138.18^\circ - 18^\circ$ $= 23.82^\circ$ $\frac{SN}{\sin 23.82^\circ} = \frac{4.5}{\sin 18^\circ}$ $= 5.881$	K1 N1 K1 N1
13	(a)	Guna rumus indeks harga $\frac{x}{1800} \times 100 = 125$ $x = \text{RM}22,50.00$ $\frac{y}{3000} \times 100 = 140$ $y = \text{RM}4,200.00$	K1 N1 N1

13	(b) (i) $\frac{125(4)+140(3)+110(x)+147.5(2)}{4+3+x+2} = 125$ $x = 6$ (ii) $\frac{125(92)}{A} = 100$ ATAU $\frac{147.50(105)}{D} = 100$ $A = 115$ $D = 154.875$ $\frac{115(4)+140(3)+110(6)+154.875(2)}{4+3+6+2} = 123.3167 // 123.32$ (iii) $\frac{x}{2200} \times 100 = 123.3167 // 123.32$ $x = \text{RM}2,712.97 // \text{RM}2,713.04$	K1 N1 K1 K1 N1 K1 N1
14	(a) I : $y - x \geq 10$ @ setara NMA II : $x \geq \frac{y}{10}$ or $10x \geq y$ @ setara NMA III : $3000x + 1800y \leq 81\,000$ @ setara NMA # Nota Simbol = tidak digunakan N1¹N1²N1³N0⁶N0¹⁰	N1¹ N1² N1³
	(b) 	K1⁴ N1⁵ N1⁶

14	(c)	(i) 38	N1 ⁷
		(ii) Lukis $25x + 10y = k$ dan ganti mana-mana titik integer dalam *rantau ke dalam $25x + 10y = k$ Ganti (4,38) RM480	K1 ⁸ K1 ⁹ N1 ¹⁰
15	(a)	$v = 0,$ $m(5)^2 + n(5) = 0$ $25m + 5n = 0$ $5m + n = 0$ $n = -5m \text{ -- (1)}$	K1
		$v = mt^2 + nt$ $a = \frac{dv}{dt} = 2mt + n$ $a = 4, t = 2$ $2m(2) + n = 4$ $4m + n = 4 \text{ -- (2)}$	K1
		(1) in (2) menggunakan kaedah penghapusan atau penggantian	
		$4m + (-5m) = 4$ $m = -4$ $n = -5(-4)$ $n = 20$	K1 N1 N1
	(b)	$-4t^2 + 20t < 0$ $4t^2 - 20t > 0$ $4t(t - 5) > 0$ $t > 5$ penyelesaian ketaksamaan kuadratik dengan menggunakan antara 3 kaedah DAN menunjukkan kedua-dua jawapan. Jawapan akhir (kesimpulan)	K1 N1

15	(c)	$v = -4t^2 + 20t$ $s = \int (-4t^2 + 20t) dt$ $s = -\frac{4t^3}{3} + \frac{20t^2}{2} + c$ $s = -\frac{4}{3}t^3 + 10t^2 + c$		K1
		$t = 0, s = 0 \text{ maka } c = 0$ $s = -\frac{4}{3}t^3 + 10t^2$		
		$t = 4$ $s_4 = -\frac{4}{3}(4)^3 + 10(4)^2$ $s_4 = \frac{224}{3}m$	$t = 5$ $s_5 = -\frac{4}{3}(5)^3 + 10(5)^2$ $s_5 = \frac{250}{3}m$	K1
		Jumlah jarak $= s_5 - s_4 $ $= \left \frac{250}{3} - \frac{224}{3} \right $ $= \frac{26}{3}$		N1

