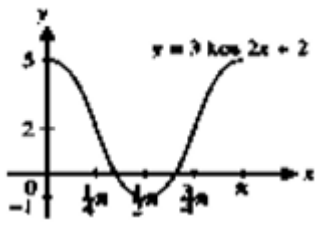


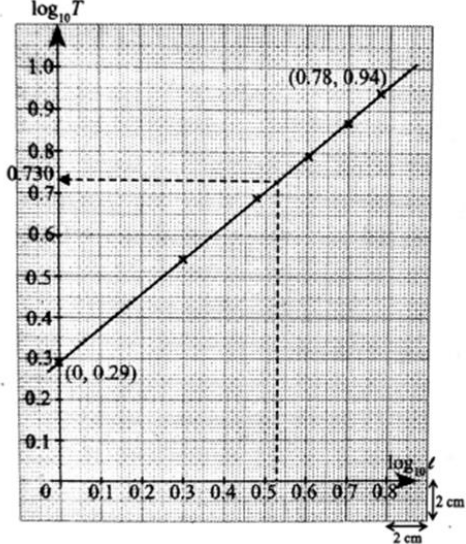
Cadangan Pemarkahan Kertas 2:

No		Cadangan Pemarkahan	Pecahan Markah	Markah Penuh
1	(a)	Hapuskan x: $y - 4z = 1$ atau $7y - [(3 + (k - 2)^2)z = 10 - 3k$ Hapuskan y: $-28 + (3 + (k - 2)^2) = 0$ $k = 7$ atau $k = -3$ ATAU Hapuskan y: $x + 7z = 2$ atau $7x + [2(k - 2)^2 - 1]z = 6k + 8$ Hapuskan x: $49 - [2(k - 2)^2 - 1] = 0$ $k = 7$ atau $k = -3$	1 1 1,1	5
	(b)	satah-satah tidak bersilang pada mana-mana titik.	1	
2	(a)	(i) $k = 2$	2	6
		(ii) $h(x) = 2x - 1$		
	(b)	$-9 = 2x - 1$ -4	2	
	(c)	$\frac{2(3) - 1}{5}$	2	
3	(a)	$\alpha + \beta = 2$ dan $\alpha\beta = \frac{5}{2}$	3	8
		$\left(\alpha - \frac{1}{\beta}\right) + \left(\beta - \frac{1}{\alpha}\right) = 2 - \frac{2}{(5/2)}$		
		atau $\left(\alpha - \frac{1}{\beta}\right)\left(\beta - \frac{1}{\alpha}\right) = \frac{5}{2} - 1 - 1 + \frac{1}{(5/2)}$		
		$x^2 - \frac{6}{5}x + \frac{9}{10} = 0$		
	(b)	$(2x - 5)(x - 1) > 0$ $x < 1, \quad x > \frac{5}{2}$	2	
	(c)	$\alpha = -\frac{k}{5}$ atau $\alpha = -\frac{4k}{5}$ $\alpha = \pm 2$ atau $\alpha = \pm 8$ $k = 10, -10$	3	

4	(a)		$\frac{1}{2} [40 - 6(1)]$ 17	2	8
	(b)		$\frac{7}{2} [40 - 6(7)] - \frac{6}{2} [40 - 6(6)]$ -19	2	
	(c)		$a=17, d = -6 \quad T_n = 17 + (n-1)(-6)$ $23 - 6n$	2	
	(d)		$23 - 6n < 0$ $n = 4$	2	
5	(a)	(i)	$\frac{1}{2} \begin{vmatrix} 2 & 2 & x & 2 \\ -3 & 5 & 1 & -3 \end{vmatrix} = 16$ (belum dapat markah) $\frac{1}{2} 2(5) + 2(1) - 3x - 2(-3) - 5x - 2(1) = 16$ atau $\frac{1}{2} [5 - (-3)(t)] = 16$	3	9
			$-4x + 8 = 16$ atau $-4x + 8 = -16$ atau $2 - x = t$ $(-2, 1)$		
		(ii)	$\frac{PK}{PL} = \frac{2}{1}$ atau $PK = 2PL$ $\sqrt{(x-2)^2 + (y-(-3))^2} = 2\sqrt{(x-2)^2 + (y-5)^2}$ $3x^2 + 5y^2 - 12x - 46y + 103 = 0$	3	
	(b)		$\sqrt{(x-m)^2 + (y-n)^2} = 2$ $-2m = -14$ atau $-2n = 20$ $(7, -10)$	3	

6	(a)	(i) (ii)	$\frac{s}{\theta} = \frac{2\pi j}{2\pi} \quad \text{atau} \quad \frac{L}{\theta} = \frac{\pi j^2}{2\pi}$ $s = j\theta$ $L = \frac{1}{2}j^2\theta$	3	7
	(b)		$13 = j(0.52)$ $\frac{1}{2} \times 25^2 \times 0.52$ $\frac{1}{2} \times 10 \times 10 \times \sin 2.102^r$ $\text{atau } \frac{1}{2} \times 10 \times 10 \times \sin 120.42^\circ$ $119.38 / 119.39$	4	
7	(a)		$\cos x = 1 - 2\sin^2 \frac{x}{2}$ $\text{atau } \sin x = 2 \sin \frac{x}{2} \cos \frac{x}{2}$ $\frac{1 - \left(1 - 2\sin^2 \frac{x}{2}\right)}{2 \sin \frac{x}{2} \cos \frac{x}{2}}$ $\frac{\sin \frac{x}{2}}{\cos \frac{x}{2}} = \tan \frac{x}{2}$	3	7
	(b)		Bentuk graf kosinus dan 1 kitaran ($0 \leq x \leq \pi$) Amplitud (maksimum 5 dan minimum -1)  $y = \frac{\pi}{x} \quad \text{atau graf salingan}$ Bilangan penyelesaian = 1	4	

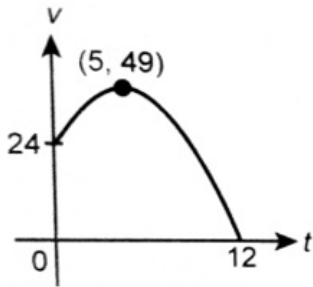
8	(a)	(i)	$\log_5 \frac{750}{6}$ 3	7	
		(ii)	$\log_3 \left(8 \times 6^2 \div \frac{96}{9} \right)$ 3		
		(iii)	Seen $\frac{\log_3 9}{\log_3 7}$ atau $\frac{\log_3 7}{\log_3 5}$ atau semua sebutan dalam asas yang sama $\log_3 5 \times \frac{\log_3 9}{\log_3 7} \times \frac{\log_3 7}{\log_3 5}$ atau $\frac{\log_7 5}{\log_7 3} \times \log_7 9 \times \frac{\log_7 7}{\log_7 5}$ atau $\frac{\log_5 5}{\log_3 5} \times \frac{\log_5 9}{\log_5 7} \times \log_5 7$ 2		
	(b)		$\frac{1}{2} \times (4 + 4\sqrt{3}) \times t = 20\sqrt{3} - 4$ $t = \frac{20\sqrt{3}-4}{2+2\sqrt{3}} \times \frac{2-2\sqrt{3}}{2-2\sqrt{3}}$ (belum dapat markah) $t = \frac{40\sqrt{3} - 120 - 8 + 8\sqrt{3}}{-8}$ $16 - 6\sqrt{3}$	3	10

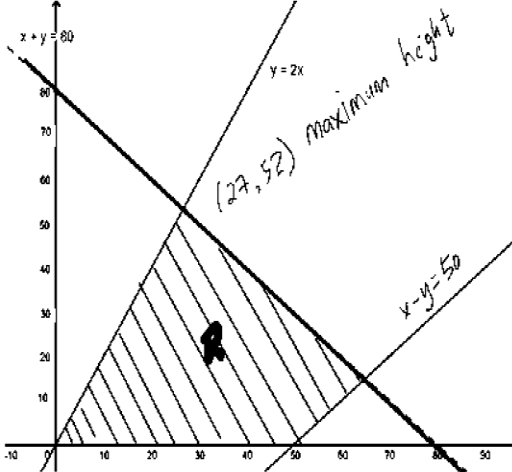
9	(a)	<table><tr><td>$\lg l$</td><td>0</td><td>0.301</td><td>0.477</td><td>0.602</td><td>0.699</td><td>0.778</td></tr><tr><td>$\lg T$</td><td>0.290</td><td>0.540</td><td>0.690</td><td>0.792</td><td>0.869</td><td>0.940</td></tr></table> 1 m ; jadual $\lg l$ betul semua 1 m : jadual $\lg T$ betul semua  1 m : paksi-paksi seragam dan satu titik plot betul 1 m : semua titik plot betul 1 m : garis lurus penyuaian terbaik	$\lg l$	0	0.301	0.477	0.602	0.699	0.778	$\lg T$	0.290	0.540	0.690	0.792	0.869	0.940	5	
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	(b)	<table><tr><td></td><td>$\log_{10} T = (q + 3)\log_{10} \ell + \log_{10} p$</td></tr><tr><td>(i)</td><td>$T = 5.37$</td></tr><tr><td>(ii)</td><td>$\frac{0.94 - 0.29}{0.78 - 0} = q + 3$$0.29 = \log_{10} p$$p = 1.950 \quad \text{dan} \quad q = -2.167$</td></tr></table>		$\log_{10} T = (q + 3)\log_{10} \ell + \log_{10} p$	(i)	$T = 5.37$	(ii)	$\frac{0.94 - 0.29}{0.78 - 0} = q + 3$ $0.29 = \log_{10} p$ $p = 1.950 \quad \text{dan} \quad q = -2.167$	5	10								
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10.	(a)	(i)	${}^nC_n \left(\frac{2}{6}\right)^n \left(\frac{4}{6}\right)^0 = \frac{1}{81}$ $n = 4$	5	
		(ii)	guna mana-mana ${}^nC_r (p)^r q^{n-r}$ dengan n = 4 dan r = 0, 1, 2, 3, 4. ${}^4C_2 \left(\frac{2}{6}\right)^2 \left(\frac{4}{6}\right)^2 + {}^4C_3 \left(\frac{2}{6}\right)^3 \left(\frac{4}{6}\right)^1 + {}^4C_4 \left(\frac{2}{6}\right)^4 \left(\frac{4}{6}\right)^0$ atau $1 - {}^4C_0 \left(\frac{2}{6}\right)^0 \left(\frac{4}{6}\right)^4 - {}^4C_1 \left(\frac{2}{6}\right)^1 \left(\frac{4}{6}\right)^3$ $0.4074 \text{ atau } \frac{11}{27}$		
	(b)	(i)	$\frac{250-260}{35} \text{ atau } \frac{350-260}{35}$ Guna $1 - P(z \leq -0.286) - P(z > 2.571)$ <u>atau $1 - P(z \geq 0.286) - P(z > 2.571)$</u> $1 - 0.3874 - 0.00506$ $303 \text{ atau } 304$	5	
		(ii)	-2.326 $h = 168.59$		

10

11	(a)	$(x + 4)(x - 2) = 0$ $A(2, 4)$	2	10
	(b)	$\left[-\frac{2^3}{3} + 8(2) \right] - \left[-\frac{(-1)^3}{3} + 8(-1) \right]$ Luas Segitiga: $\frac{1}{2}(1)(2)$ atau $\frac{1}{2}(2)(4)$ $\left[-\frac{2^3}{3} + 8(2) \right] - \left[-\frac{(-1)^3}{3} + 8(-1) \right] + \frac{1}{2}(1)(2) - \frac{1}{2}(2)(4)$ 18	4	
	(c)	$y = 7$ $\pi \left[\frac{-y^2}{2} + 8y \right]_7^8$ atau $\pi [y]_0^7$ atau $\pi(1^2)(7)$ $\pi(7 - 0) + \pi \left[\left(\frac{-8^2}{2} + 8(8) \right) - \left(\frac{-7^2}{2} + 8(7) \right) \right]$ $7\frac{1}{2}\pi$	4	

12	(a)	(i)	$10 - 2t = 0$ and one step forward $v = 10t - t^2 + c$ and subs. $t = 0$ and $v = 24$ $10(5) - 5^2 + 24$ 49	6	10
		(ii)	$(k + 2)(k - 12) = 0$ atau $(t + 2)(t - 12) = 0$ $k = 12$		
	(b)		 Bentuk $\cap$ dengan titik maksimum (5, 49) Lihat titik (0, 24) dan (12, 0) $\left[-\frac{1}{3}(12)^3 + (12)^2 + 24(12) \right] - 0$ 432	4	

13	(a)	$120 = \frac{P_{2020}}{4.20} \times 100$ 5.04	2	10
	(b)	<u>Seen semua indeks harga 2020 berdasarkan tahun 2016</u> 140, 120, 160 dan 90 $\frac{140(10) + 120(10) + 160(30) + 90(50)}{10 + 10 + 30 + 50}$ 119 $119 = \frac{47\,600}{P_{2016}} \times 100$ $40\,000$	5	
	(c)	$\frac{119 \times 150}{100}$ 178.5 78.5%	3	
14	(a)	$x - y \leq 50 \text{ atau } y \geq x - 50$ $\frac{x}{y} \geq \frac{1}{2} \text{ atau } 2x \geq y \text{ atau } y \leq 2x$ $x + y \leq 80$	3	10
	(b)		3	
	(c)	(i) $15 \leq x \leq 50$ (ii) $P = 30x + 45y$ $30(27) + 45(52)$ 3150	4	

15	(a)	(i)	$\frac{\sin \angle QRP}{3} = \frac{\sin 30}{8}$ $\angle QRP = 10.81^\circ$	2	10
		(ii)	$QS^2 = 8^2 + 6^2 - 2(8)(6)\cos 40.81$ $QS = 5.2287 / 5.229$	2	
		(iii)	seen 139.19° $\frac{1}{2}(3)(8)\sin 139.19^\circ$ 7.8426	3	
	(b)	$AC^2 = 4^2 + 5^2 - 2(4)(5)\cos x$ atau $AC^2 = 6^2 + 7^2 - 2(6)(7)\cos(180 - x)$ $4^2 + 5^2 - 2(4)(5)\cos x = 6^2 + 7^2 - 2(6)(7)\cos(180 - x)$ $\angle ABC = 110.78^\circ$		3	