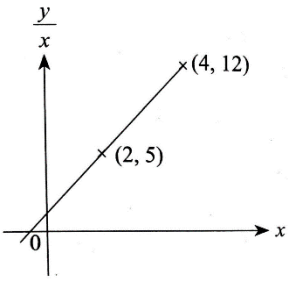


SKEMA PERMAKAHAN PEPERIKSAAN PERCUBAAN SPM TINGKATAN 5
MATEMATIK TAMBAHAN KERTAS 1

NO. SOALAN	PEMARKAHAN	MARKAH	JUMLAH
BAHAGIAN A (64 M)			
1	$10 + 10\lambda + 4 + 6\mu + 6 = 40$ $10\lambda + 6\mu = 20$ $5\lambda + 3\mu = 10$ $\mu = \frac{10 - 5\lambda}{3}$	1 1	2
2(a)		2	
(b)	$m = \frac{12 - 5}{4 - 2} = \frac{7}{2}$ $k^2 = \frac{7}{2}$ $k = \sqrt{\frac{7}{2}}$ $12 = \frac{7}{2}(4) + \frac{5}{h}$ $h = -\frac{5}{2}$	1 1	
		1	4
3(a)	$2(3^x) = 162$ $3^x = 81$ $3^x = 3^4$	1 1 1	
(b)	$x = 4$ $3^n(3^4) + 3^n(3^5) + (3^n)$ $(3^4 + 3^5 + 1)3^n$	1 1 1	5

	$325 (3^n)$		
4(a)	$\left(\frac{(k-4)(k+4)}{k-4} \right)$ $= ((k + 4))$ $= 8$	1 1	
(b)	$\frac{dv}{dy} = 6y - 2$ $\delta v = [6(2) - 2] \times 9 - 0.01)$ $= -0.1$	1 1	4
5(a)	$x < m \text{ atau } x > n$	1,1	
(b)	$(-8)^2 - 4ac > 0$ $a < \frac{16}{c}$	1 1	
(c)	$m + n = \frac{8}{a} \quad , \quad mn = \frac{c}{a}$ $\frac{m+n}{mn} = \frac{\frac{8}{a}}{\frac{c}{a}} \text{ or } \left(\frac{8}{a} \right) \left(\frac{a}{c} \right)$ $\frac{m+n}{mn} = \frac{8}{c}$	1 1 1	7
6(a)	$OC \times CT = 40$ $5 \times CT = 40$ $CT = 8\text{cm}$ $\tan \Theta = \frac{8}{5}$ $\Theta = 58^\circ \times \frac{\pi}{180^\circ} = 1.012 \text{ rad}$	1	
(b)	$\text{Luas sektor OAB} = \frac{1}{2} (5)^2 \left[\frac{\pi}{2} - 1.012 \right] = 6.9875 \text{ cm}^2$ $\text{Panjang lengkok AB} = 5 \left[\frac{\pi}{2} - 1.012 \right] = 2.795 \text{ cm}$	1 1	
(c)		1 1	

		Panjang BT = $\sqrt{8^2 + 5^2} - 5 = 4.434 \text{ cm}$ Perimeter = $2.795 + 4.434 + 3 + 5$ $= 15.229 \text{ cm}$	1	6
7 (a)(i)	$\vec{BD} = \vec{BA} + \vec{AD}$ $= -\underline{u} - 6\underline{v} + (7\underline{u} - 2\underline{v})$ $= 6\underline{u} - 8\underline{v}$ $\vec{BM} = \frac{1}{2}(6\underline{u} - 8\underline{v}) = 3\underline{u} - 4\underline{v}$	1 1		
(ii)	$\vec{AM} = (\underline{u} + 6\underline{v}) + (3\underline{u} - 4\underline{v})$ $= 4\underline{u} + 2\underline{v}$	1		
(b)	$\vec{AC} = (7\underline{u} - 2\underline{v}) + (3\underline{v} - \underline{u})$ $= 6\underline{u} + 3\underline{v} - 2\underline{v}$ $\vec{AC} = \lambda \vec{AM}$ $6\underline{u} + (3k - 2)\underline{v} = \lambda(4\underline{u} + 2\underline{v})$ $\lambda = \frac{3}{2} \quad k = \frac{5}{3}$	1 1 1		6
8(a)	$(p, t) = (\frac{2h(3)+2p(2)}{2+3}, \frac{h(3)+3t(2)}{2+3})$ $p = \frac{6h+4p}{5} \quad \text{or} \quad t = \frac{3h+6t}{5} \quad \text{or} \quad h = \frac{-t}{3} \quad \text{or} \quad p = \frac{6(\frac{-t}{3})+4p}{5}$ $P = -2t$	1 1 1		
(b)	$m_2 = \frac{-1}{3}, \quad B(-2,1)$ $y - 1 = -\frac{1}{3}(x + 2)$ $y = -\frac{1}{3}x - \frac{2}{3} + 1$ $y = -\frac{1}{3}x + \frac{1}{3} \quad / \text{ATAU kaedah Setara} / \text{OR other valid Method}$	1 1 1		6
9(a)	$\int_{-1}^1 g(x)dx = \frac{1}{2} \left[\frac{2x-1}{x^2} \right]_{-1}^1$ $= \frac{1}{2} \left[\frac{2(1)-1}{1^2} - \frac{2(-1)-1}{(-1)^2} \right]$ $= \frac{1}{2} [1 - (-3)]$	1 1 1		

(b)	$= 2$ $\int_4^5 f(x) dx + \int_5^7 f(x) dx + \int_7^{10} f(x) dx$ 7	1	
10(a)	$80, 78, 76, \dots, 6$ $80 + (n - 1)(-2) = 6$ $2n = 76$ $n = 38$	1	
(b)	Tinggi dinding = 38×7 $= 266 \text{ cm}$ $S_{28} = \frac{38}{2} [2(80) + (80 - 1)(-2)]$ $= 1634 \text{ cm}$ kos batu bata = $1634 \times \text{RM}0.50$ $= \text{RM } 817$	1	5
11(a)	$\frac{n!}{(n-2)!2!} = 36$ $\frac{n(n-1)(n-2)!}{(n-2)!2!} = 36$ $n^2 - n - 72 = 0$ $(n - 9)(n + 8) = 0$ $n = 9 \text{ (accept)}$	1	
12 (a)	$2P_1 \times 4P_3$ 48	1	
(b) (i)	$4P_3 \times 3P_1$ 72	1	
(ii)		1	7
	$a + b + a + b + b + a + 0.1 = 1$ $3a + 3(2a) = 0.9$ $a = 0.1$	1	

	$b = 2(0.1) = 0.2$	1	
(b)	$P(X > 1) = 1 - 0.1 - 0.2$ $= 0.7$	1	4
BAHAGIAN B (16 M)			
13(a)	$k = 8$	1	
(b)(i)	$f(10) = 10$ $\frac{10+m}{10-8} = 10$ $10+m = 10(2)$ $m = 10$	1 1	
(ii)	$f(x) = \frac{x+10}{x-8}$ $\frac{x+10}{x-8} = y$ $x+10 = xy-8y$ $x-xy = -8y-10$ $x = \frac{-8y-10}{1-y}$ $x = \frac{8y+10}{y-1}$ $f^{-1}(x) = \frac{8x+10}{x-1}$	 1 1 1	
(iii)	$\frac{1}{2}f^{-1}(p) = 1$ $\frac{1}{2}\left(\frac{8p+10}{p-1}\right) = 1$ $4p+5 = p-1$ $3p = -6$ $p = -2$	 1 1	8
14(a)	(i) $\frac{1}{\cos 2\theta} = \frac{1}{2\cos^2 \theta - 1}$ $= \frac{1}{2k^2 - 1}$	1 1 1	

	$-2p = -2$ $p = 1$	1	8
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