

SKEMA PEMARKAHAN

No.	Skema Pemarkahan	Submarks	Total Marks
1(a)	$3k^{\frac{1}{2} + (-\frac{1}{3})}$	1	
	$3k^{\frac{1}{6}}$	1	
1(b)	$(5^x)(5) - (5^x)(5)^{-1} + (5^x)$	1	
	29(5 ^{x-1}) boleh dibahagi tepat dengan 29 bagi semua integer positif <i>x</i> atau 5 ^{x-1}	1	
2	$\cos \angle AOL = \frac{16}{20}$ atau $\sin \angle AOL = \frac{12}{20}$ atau	1	
	$\tan \angle AOL = \frac{12}{16}$		
	$\angle AOB = 73.74^\circ$ atau 1.287 rad	1	
	20×1.287 atau $\frac{73.74}{360} \times 2\pi(20)$	1	
	25.74	1	4
3	$xy = 7 - x$	1	
	$a = 7$	1	
	$3 = 7 - b$ ATAU $-1 = \frac{7-3}{0-b}$	1	
	$b = 4$ $b = 4$	1	
4(a)	$\text{Kos } x = \frac{90}{L}$	1	
	$L = \frac{90}{\cos x}$		
	$= \frac{90}{(1 - 2\sin^2 \frac{x}{2})}$	1	
	$= \frac{90}{1 - 2(2t)^2}$		
	$= \frac{90}{1 - 8t^2}$	1	

4(b)	$\text{Kos } \frac{x}{2} = \sqrt{1 - 4t^2}$ $\frac{2t}{\sqrt{1-4t^2}}$	1	
		1	5
5(a)	$99N = 54$ $N = \frac{6}{11}$	1	
		1	
5(b)	$\frac{1}{2}(\sqrt{5} + \sqrt{2})(2\sqrt{5} - \sqrt{2})$ $= \frac{1}{2}[(2 \times 5) - \sqrt{2}\sqrt{5} + 2\sqrt{2}\sqrt{5} - 2] \text{ atau setara}$ $= 4 + \frac{1}{2}\sqrt{10}$	1	
		1	
		1	5
6(a)	$2\vec{AB} = \vec{DC}$ $2\vec{AB} = -\vec{CD}$ $2[(h + 2)\underline{i} - 3\underline{j}] = -(2\underline{i} + 3k\underline{j})$ $2(h + 2)\underline{i} - 6\underline{j} = -2\underline{i} - 3k\underline{j}$ <p><i>Bandingkan</i></p> $2(h + 2) = -2$ $2h + 4 = -2$ $h = -3$ <p><i>Bandingkan</i></p> $-3k = -6$ $k = 2$	1	
		1	
		1	
6(b)	$ \vec{AB} = \sqrt{(-1)^2 + (-3)^2}$ $= \sqrt{10}$ <p>vektor unit dalam arah $\vec{AB} = \frac{-\underline{i} - 3\underline{j}}{\sqrt{10}}$</p>	1	
		1	5
7(a)	$f(x) = \frac{4}{(1-2x)^3}$ $f'(x) = (4)(-3)(1 - 2x)^{-4}(-2)$ $= 24(1 - 2x)^{-4}$ <p>m + n = 20</p>	1	
		1	

7(b)	$\frac{1}{p} \int f'(x) dx = -\frac{1}{81}$ $\frac{1}{p} \left(\frac{4}{(1-2x)^3} \right) = -\frac{1}{81}$ $\frac{1}{p} \left\{ \frac{4}{[1-2(2)]^3} \right\} = -\frac{1}{81}$ <p>$p = 12$</p>	1	1	5
8(a) (i)	$C(x, y) = \left(\frac{2(-12)+1(3)}{1+2}, \frac{2(1)+1(7)}{1+2} \right)$ $= (-7, 3)$	1	1	6
(a) (ii)	$y - 1 = \frac{2}{5}(x - (-12))$ $y = \frac{2}{5}x + \frac{29}{5} \text{ or equivalent}$	1	1	
8(b)	$\sqrt{(x-3)^2 + (y-7)^2} = 6$ $x^2 - 6x + 9 + y^2 - 14y + 49 = 36$ $x^2 + y^2 - 6x - 14y + 22 = 0$	1	1	
9(a)	$\sqrt{25p(1-p)} = \sqrt{\frac{50}{9}} \quad \text{or} \quad 25p(1-p) = \frac{50}{9}$ $9p^2 - 9p + 2 = 0$ $p = \frac{1}{3}$ $25 \times \frac{1}{3}$ $\frac{25}{3}$	1	1	6
9(b)(i)	0.7881	1		
(ii)	$\text{Skor-z} = -0.8$ $\frac{X - 84}{5} = -0.8$ $X = 80$	1	1	

12(b)(i)	$\frac{px-q}{rx} = y$ $x(p-ry) = q$ $x = \frac{q}{p-ry} \quad @ \quad y = \frac{q}{p-rx}$ $g^{-1}(x) = \frac{q}{p-rx}, \quad x \neq \frac{p}{r}$	1	7
12(b)(ii)	$g^{-1}(x) = \frac{-1}{2-3x} \text{ atau setara}$	1 OF	
13(a)	$h(x) = -x^2 + 10x$ $= - [x^2 - 10x + \left(\frac{-10}{2}\right)^2 - \left(\frac{-10}{2}\right)^2]$ $= - [(x-5)^2 - 25]$ $h(x) = -(x-5)^2 + 25$	1 1 1	8
13(b)	Ketinggian maksimum = 25 m	1	
13(c)	<p>AD = 12 m bila h(x) adalah maksimum.</p> $x = \frac{12}{2} = 6$ $6 + p = 0$ $p = -6$ <p>Pada titik E(4,32)</p> $32 = a(4-6)^2 + q$ $32 = 4a + q$ $q = 32 - 4a$ <p>or Pada titik A(0,0)</p> $0 = a(0-6)^2 + q$ $0 = 36a + q$ <p>maka</p> $36a + (32 - 4a) = 0$ $32a + 32 = 0$ $a = -1$ $q = 32 - 4(-1)$ $= 32 + 4$ $= 36$ <p>Ketinggian adalah maksimum = 36 m. Maka bola golf tidak boleh sampai ke bumbung dewan kerana $36 < 50$</p>	1 1 1 1	

14(a)(i)	$S_n = a + (a+d) + (a+2d) + \dots + [a+(n-2)d] + [a+(n-1)d]$ atau (hasil tambah n sebutan pertama ditulis dengan terbalikkan susunan) $S_n = [a+(n-1)d] + [a+(n-2)d] + \dots + (a+2d) + (a+d) + a$ $2S_n = [2a+(n-1)d] + [2a+(n-1)d] + \dots + [2a+(n-1)d]$ $2S_n = n[2a+(n-1)d]$ dan lihat $S_n = n/2 [2a+(n-1)d]$	1	
14(a)(ii)	$S_n = \frac{n}{2} [2(3) + (n-1)(4)]$ $2n^2 + n$	1	
14(b)	$2n^2 + n = 1275$ $3 + (25-1)(4)$ atau $1275 - [2(24)2 + 24]$ atau $\frac{25}{2} [3 + x] = 1275$ $x = 99$	1 1 1	8
15(a)	Biarkan panjang = y $2x + 2y + \pi x = 120$ $y = 60 - x - \frac{1}{2} \pi x$ $L = 2xy - \frac{1}{2} \pi x^2$ $L = 2x \left(60 - x - \frac{1}{2} \pi x \right) - \frac{1}{2} \pi x^2$ $L = 120x - 2x^2 - \frac{3}{2} \pi x^2$	1 1 1	
15(b)	$\frac{dL}{dx} = 120 - 4x - 3\pi x$ Bila L maksimum, $\frac{dL}{dx} = 0$ $120 - 4x - 3\pi x = 0$ $x = \frac{120}{(4+3\pi)}$	1 1 1	
15(c)	$\frac{dL}{dt} = -0.02$ $\frac{dA}{dr} = 8\pi$, Biar A = luas semi bulatan $\frac{dr}{dt} = \frac{\frac{dA}{dt}}{\frac{dA}{dr}}$ $\frac{dr}{dt} = -\frac{0.02}{8\pi}$ $= -\frac{1}{400\pi}$	1 1	8

