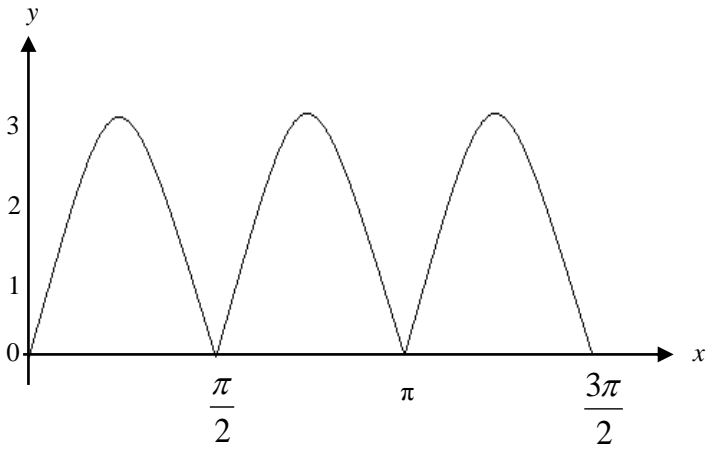


SKEMA PEPERIKSAAN PERCUBAAN SPM – MATH.TAMBAHAN 2017			
No.	PEMARKAHAN		JUMLAH
1	(a)	$\theta = 0.9675 \text{ rad}$ $3.87 = 4\theta$	2 B1 (guna $s = r\theta$)
	(b)	17.40 $L = \frac{1}{2}(4^2)(2 \cdot 175)$	2 B1 ($\theta = 3.142 - 0.9675$)
2	(a)	6x	1
	(b)	0.36 $\delta y = 18 \times 0.02$ 0.02)	2 B1 (seen $\frac{dy}{dx} = 18$ or $\delta x =$)
3		48 $f''(x) = 24(2x - 3)^2(2)$ $f'(x) = 4(2x - 3)^3(2)$	3 B2 B1
4		$t = 11$, $t = 3$ $2t - 14 = 8$ or $2t - 14 = -8$ $\frac{1}{2} 0(t) + 2(-1) + (-2)(3) - 3(2) - t(-2) - (-1)(0) = 4$	3 B2 B1
5		$2x^2 + 2y^2 + 9x + 2y + 5 = 0$ $9[x^2 + 4x + 4 + y^2] = x^2 + y^2 - 8y + 16$ $3\sqrt{(x+2)^2 + (y)^2} = \sqrt{(x+0)^2 + (y-4)^2}$	3 B2 B1

6	<p>(a) $3\underline{b} - 5\underline{a}$ 1</p> <p>(b) $\sqrt{5}$ 3</p> <p>$\vec{QR} = \sqrt{1^2 + (-2)^2}$ B2</p> <p>$\vec{QR} = \underline{a} - 2\underline{b}$ B1</p>	4	
7	<p>$m = 15$ and $n = 6$ 4</p> <p>$m = 15$ or $n = 6$ B3</p> <p>$3 = -4n + 27$ or $m = -4(3) + 27$ B2</p> <p>$\frac{y}{x} = -4x + 27$ B1</p>	4	
8	<p>(a) $2, -2$ 1</p> <p>(b) $\{4, 1, 0\}$ 1 (or {0, 1, 4})</p>	2	
9	<p>(a) 18</p> <p>(b) $2x + 12$</p> <p>B1: $8\left(\frac{y+5}{4}\right) + 2$</p>	1 2	3
10	<p>(a) 5</p> <p>(b) 21</p> <p>B1: $\frac{p(-2)}{(-2)-5} = 6$</p>	1 2	3
11	<p>$x = -1$</p> <p>B2: $5^x = \frac{1}{5}$ or $5^x = 5^{-1}$</p> <p>B1: $5^x(5^2)$ or $5^x(5^1)$</p>	3	3
12	<p>(a) $\frac{1}{5}$</p> <p>(b) $k = a^{10}$</p> <p>B2: $\log_5 k = \log_5 x^2$ or $5^{\log_5 x^2}$ or $\log_5 k = 2\log_5 a^5$</p> <p>B1: $\frac{\log_5 k}{\log_5 25}$ or $5^{2\log_5 x}$</p>	1 3	4
13	<p>(a) $3x^2 - 6x - 11 = 0$</p>	1	3

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	(b) 2 punca berbeza B1: $(-6)^2 - 4(3)(-11)$	2	
14	(a) 45 B1: $p + 30 = 75$ (b) 100	2 1	3
15	(a) $\frac{3}{4}$ (b) $\frac{11}{20}$ B1: $\left(\frac{1}{4} \times \frac{2}{5}\right) + \left(\frac{3}{4} \times \frac{3}{5}\right)$	1 2	3
16	$h = 164.68$ B2: $\frac{h-168}{10} = 0.332$ B1: $P\left(Z > \frac{h-168}{10}\right) = 0.63$	3	3
17.		1 1 1	3
18.	(a) $\frac{1}{m}$ (b) $\frac{1}{1-m^2}$ $1 + \left(\frac{1}{\sqrt{1-m^2}}\right)^2$ $1 + \cot^2 \theta$	1 3 B2 B1	4
19.	$n = 9$	4	4

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	$3n > 24$ $-21 + (n - 1)(3) > 0$ $a = -21$ atau $d = 3$	B3 B2 B1	
20.	$x = 8$ $x^2 - 8x + 16 = x^2 - 6x$ $\frac{x - 4}{x} = \frac{x - 6}{x - 4}$	3 B2 B1	3
21.	a) 792 b) 160 ${}^4C_1 \times {}^6C_3 \times {}^2C_1$	1 2 B1	3
22.	(a) $\begin{pmatrix} -8 \\ -4 \end{pmatrix}$ b) $\frac{1}{4\sqrt{5}}(-8i - 4j)$ atau setara $\sqrt{(-8)^2} + \sqrt{(-4)^2}$	1 B2 B1	3
23.	$p = 12$ dan $k = 15$ $p = 12$ atau $k = 15$ $k - 6 = \frac{3k}{5}$	3 B2 B1	3
24.	3 $= \frac{2(2)}{3-2} - \frac{2(1)}{3-1}$ $= \left[\frac{2x}{3-x} \right]_1^2$	3 B2 B1	3
25.	$y = \frac{x^3}{3} - 6x + \frac{41}{3}$ $8 = \frac{(1)^3}{3} - 6(1) + c$ $y = \frac{x^3}{3} - 6x + c$	3 B2 B1	3

