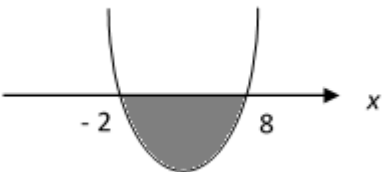


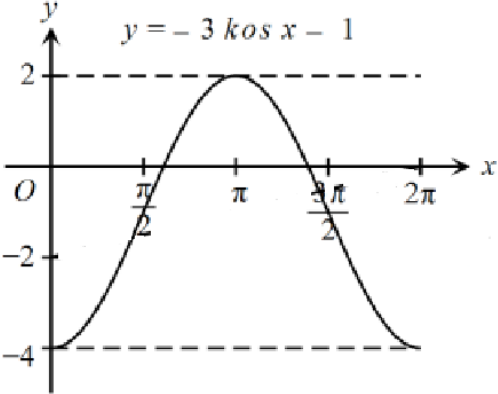
PEPERIKSAAN PERCUBAAN SPM 2019
 MATEMATIK TAMBAHAN KERTAS 1
 SKEMA JAWAPAN

1	(a) $x = 3$ (b) 1 048 560 B1: $\frac{3(4^{10} - 1)}{3}$ or $\frac{3(4^2 - 1)}{3}$	1 2	3
2	$y = \frac{10^3}{x}$ B2: $\log(xy) = 3$ B1: $m = \frac{2 - 0}{1 - 3}$	3	3
3	(a) $\frac{x}{6} + \frac{y}{-8} = 1$ (b) $x^2 + y^2 - 8x - 10y + 16 = 0$ B1: $\sqrt{(x - 4)^2 + (y - 5)^2}$	1 2	3
4	(a) $\begin{pmatrix} x \\ y \end{pmatrix} = \begin{pmatrix} 8 \\ 6 \end{pmatrix}$ (b) 5 B1: $ AB = \sqrt{8^2 + 6^2}$	1 2	3
5	(a) 1, -1 (b) Banyak kepada satu	1 1	2

6	$x = 210^\circ, 330^\circ$ B2: $\sin x = -\frac{1}{2}$ or $\sin x = 2$ B1: $2(1 - \sin^2 x) + 3\sin x = 0$	4	4
7	(a) 22.2 cm (b) 115.897 B1 : $\frac{1}{2}(12)^2(1.85)$ or $\frac{1}{2}(6)^2 \sin 106^\circ$ B2 : 133.2 – 17.303	1 3	4
8	$\frac{1}{16}$ B1 : 2^{3n-1} or 5^{3n-1} or $2^{3(1+n)}$ B2 : $2^{3n-1-3-3n} \times 5^{3n-1+1-3n}$	3	3
9	$p = 4$ and $q = \frac{1}{4}$ B2: $p = 4$ or $q = \frac{1}{4}$ B1 : $f'(x) = 4p(px+1)^3$	3	3
10	$-2 \leq x \leq 8$ B2 :  B1: $(x+2)(x-8) \leq 0$	3	3

11	$y = 3x - 8$ B2 : titik tengah = $\left(\frac{6}{2}, \frac{2}{2}\right)$ or $(3, 1)$ or $y - 1 = 3(x - 3)$ B1 : $-\frac{1}{3}m_2 = -1$ or $m_2 = 3$	3	3
12	(a) $p = 1$ B1 : $\left(\frac{4}{2}\right) = k\left(\frac{2}{p}\right)$ or $2k = 4$ or $2 = 2p$ (b) $p = \pm 4$ B1 : $\sqrt{4^2 + 2^2} = \sqrt{2^2 + p^2}$ or $p^2 = 16$	2 2	4
13	(a) $x^2 - 5x - 6 = 0$	1	4
	(b) -6	1	
	(c) 2 punca berbeza B1 $(-5)^2 - 4(1)(-6)$	2	
14	(a) $\frac{1}{10}$	1	3
	(b) $\frac{19}{20}$ B1 $1 - \left(\frac{3}{5} \times \frac{1}{4} \times \frac{1}{3}\right)$	2	
15	(a) 40	1	3
	(b) 8.525 // 8.53 B1 $\frac{2(3) + 7(5) + 8(15) + 11(10) + 14(5)}{40}$	2	

16	$\frac{2}{3}$ <p>B2 $\left(\frac{25m}{2} - \frac{m}{2}\right) + 3m = 10$</p> <p>B1 $\left[\frac{mx^2}{2}\right]_1^5 - 2(5) = -3m$</p>	3	3
17	<p>-3 dan $\frac{1}{3}$</p> <p>B1 $3x + 4 = 5$ atau $3x + 4 = -5$ dilihat</p>	2	2
18	(a) 5	1	3
	<p>(b) $-\frac{1}{2}$</p> <p>B1 $\log_{25} k = \frac{1}{2}$</p>	2	
19	(a) Janjang aritmetik	1	3
	(b) 52	1	
	(c) 16°	1	
20.	<p>(a) $x = 4$</p> <p>(b) $f(x) = -(x - 4)^2 + 9$</p> <p>B1 $f(x) = (x - 4)^2 - 9$</p>	1 2	3

21.	$m = 7$ dan $n = 3$ B2 $m=7$ or $n=3$ B1 $\frac{x-m}{3}$	3	3
22.	$p = 27, q = \frac{27}{4}$ dan $s = \frac{27}{16}$ B2 $p = 27$ or $q = \frac{27}{4}$ or $s = \frac{27}{16}$ B1 $ar^4 = \frac{27}{64}$ atau $r = \frac{1}{4}$	3	3
23.	(a) 40 (b) 20 B2: $x - 15 = \pm 10$ or $x = 5, 25$ B1: $\frac{2}{5}(x - 15)^2 - 40 = 0$	1 3	4
24.	(a) 120 B1: 5P4 (a) 210 B1: 7P3 x 1P1	2 2	4
25.	 <p>Semua betul</p> <p>B3: -kos dan anjakan -1</p> <p>B2: bentuk kos dan satu kala</p> <p>B1: bentuk kos</p>	4	4

