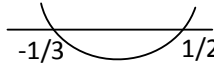
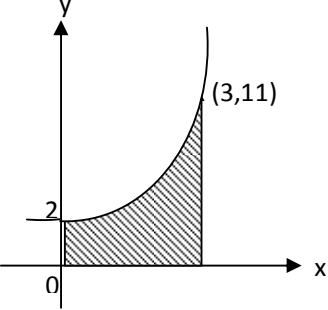


JAWAPAN MODUL 3 KERTAS 1

No. Soalan	Penyelesaian dan Skema Pemarkahan	Sub Marks	Total Marks
1	(a) {2,4}	1	2
	(b) $f(x) = \frac{x}{3}$	1	
2	(a) 4x-5	1	2
	(b) 3	1	
3	$a = 3, b = 4$ (both) B2: $a = 3$ or $b = 4$ B1: $a(x-2)^2 - b$		3
4	$m = \frac{1}{3}, n = 5$ (both) B3: $m = \frac{1}{3}$ or $n = 5$ B2: $3m^2 + 5m - 2 = 0$ or $m - 2 = -\frac{n}{3}$ and $-2m = -\frac{2}{3}$ B1: $3(-2)^2 + n(-2) - 2$ or $HTP = m + (-2)$ and $TDP = (m)(-2)$		4
5	$f(x) = -\frac{1}{3} \leq x \leq -\frac{1}{2}$ B2: $(2x-1)(3x+1) \leq 0$ or  B1: $6x^2 - x - 1 \leq 0$		3
6	(a) 4	1	4
	(b) 400 B2: $\frac{15}{2}[2(2) + (15-1)(4)] - \frac{5}{2}[2(2) + (5-1)(4)]$ B1: $S_{15} - S_5$ or $\frac{15}{2}[2(2) + (15-1)(4)]$ or $\frac{5}{2}[2(2) + (5-1)(4)]$	3	
7	$x = 9, y = 3$ ; $x = 18, y = 12$ (both) B3: $x = 9, y = 3$ or $x = 18, y = 12$ B2: $27 + x + y = 21$ and $\frac{x}{27} = \frac{y}{x}$ B1: $27 + x + y = 21$ or $\frac{x}{27} = \frac{y}{x}$		4

8	<p>(a) <math>h = 0.003, k = 0.0003</math> (both)</p> <p>(b) <math>p = 12</math></p> <p>B1: <math>r = 0.1</math> atau <math>0.08 + \frac{0.03}{1-r}</math></p>	1	3
9	<p><math>\frac{q+2p}{q+p}</math></p> <p>B2: <math>\frac{\log_m 4 + \log_m 3^2}{\log_m 3 + \log_m 4}</math> or equivalent</p> <p>B1: <math>\frac{\log_m 36}{\log_m 12}</math> (changing to base m)</p>		3
10	<p>25</p> <p>B1: <math>5 = 2^x</math> @ <math>(2^2)^x</math></p>		2
11	<p>3</p> <p>B2: <math>2^x = 2^8</math></p> <p>B1: <math>(2^x)(2^3)</math></p>		3
12	<p>B1: <math>\frac{y}{x} = hx^2 + k</math></p> <p>B2: <math>-5 = h(1)^2 + k</math> atau <math>1 = h(4)^2 + k</math> <math>h = 2</math> or <math>k = -7</math></p> <p>B3: <math>h = 2</math> atau <math>k = -7</math></p> <p>B1: <math>h = 2</math> dan <math>k = -7</math> (kedua-duanya)</p>		3
13	<p><math>4x^2 + 4y^2 - 11x + 3y - 2 = 0</math></p> <p>B2: <math>\sqrt{(x - (-2))^2 + (y - 3)^2} = 3\sqrt{(x - 1)^2 + (y - 0)^2}</math></p> <p>B1: <math>\sqrt{(x - (-2))^2 + (y - 3)^2}</math> or <math>\sqrt{(x - 1)^2 + (y - 0)^2}</math></p>		3

14	(a)	$\frac{k\sqrt{4-k^2}}{2}$ $B1: 2\left(\frac{k}{2}\right)\left(\frac{\sqrt{4-k^2}}{2}\right)$	2	4
	(b)	$k = 1$ $B1: 1 - 2\sin^2 \theta = \frac{k}{2}$	2	
15		$33^\circ 41', 56^\circ 19', 213^\circ 41', 236^\circ 19' \quad (\text{all})$ $B3: 33^\circ 41', 56^\circ 19'$ $B2: (2 \tan x - 3)(3 \tan x - 2) = 0$ $B1: 6(1 + \tan^2 x) - 13 \tan x = 0$		3
16		$k = 2, k = -4 \quad (\text{both})$ $B2: 1, -2 \text{ atau } (k - 2)(k + 4) = 0$ $B1: 3k = 6\lambda \text{ atau } 4 = \lambda(2 + k)$		3
17	(a)	$3i + 5j$	1	2
	(b)	$\sqrt{34}$	1	
18		$6.60$ $B2: \frac{1}{2}(7)^2\pi = \frac{1}{2}(\text{OP})^2(1.125)$ $B1: \frac{1}{2}(7)^2\pi \text{ or } \frac{1}{2}(\text{OP})^2(1.125)$		3
19	(a)	$0.0159$ $B1: \frac{dr}{dt} = \frac{1}{2\pi} \times 0.1, \text{ use } (\text{Perimeter} = 2\pi r)$	2	4
	(b)	$4.854$ $B1: r_{\text{new}} = r + 5(*0.0159), \text{ use } (30 = 2\pi r)$	2	

20		$\frac{49}{2}$ atau 24.5  B3: $x = 7$  B2: $7 - x = 0$  B1: $L = \frac{1}{2}(x)(14 - x)$	4          2	4
21	(a)  (b)	$t + 3$  $t = 3, t = 4$ (both) B1: $t - 1 = 2$ or $t - 1 = 3$	1          2	3
22	(a)          (b)	  $33 \text{ cm}^2$ B1: $18 + 15$ or $3 \times 11$	1          2	3
23	(a)          (b)	$120$ B1: $5!$ or $5P_5$  $72$ B1: $4!2!$ or $48(\text{seen})$	2          2	4
24	(a)          (b)	$0.05764$ B1: ${}^8C_8(0.7)^8(0.3)^0$  $0.9987$ B1: $1 - [{}^8C_0(p)^0(q)^8 + {}^8C_1(p)^1(q)^7]$ or ${}^8C_0(0.7)^0(0.3)^8$ or ${}^8C_1(0.7)^1(0.3)^7$	2          2	4

25		$r = 14.59$  B2: $\frac{r-10}{3} = 1.53$  B1: $1-0.937$ or $\frac{r-10}{3}$ or $1.53$ (seen)		3