

SKEMA KERTAS 1 SET 2

Number	Solution and Mark Scheme	Sub Marks	Total Marks
1	$p + q = 10$ $10 - p = q - 10$	1 B1	2
2	$\frac{162}{7}$ $s_{\infty} = \frac{18}{1-\frac{2}{9}} \quad @ \quad r = \frac{2}{9}$	1 B1	2
3	$k = 1, k = 2$ $\left(\frac{6-k}{-6-4}\right)\left(\frac{-3-k}{2-4}\right) = -1$ $\left(\frac{6-k}{-6-4}\right) @ \left(\frac{-3-k}{2-4}\right)$	1 B2 B1	3
4	Tidak menyalang pada paksi-y $-68 < 0$ $b^2 - 4ac = (-6)^2 - 4(2)(13)$ $2(0)^2 + 2y^2 - 5(0) + 6y + 13 = 0$	1 B3 B2 B1	4
5	$x = 2$ $3^x(3^{-1} + 1) = 12 @ (3^x)(3^{-1}) + 3^x = 12$	1 B1	2
6	$\frac{x^3y^5}{7^8}$ $7^{-2+(-12)-(-2)}x^{-2+3-(-2)}y^{3-(-2)}$ $\frac{7^2x - 2 \cdot 7^{2(-6)}x^3y^3}{7^{-2}x^{-2}y^{-2}}$	1 B2 B3	3
7	$x = 2$ $\log_x \left(\frac{\sqrt{128}}{2x}\right) = \frac{3}{2}$ $\log_x 128 - \frac{\log_x 2x}{\log_x \sqrt{x}} = 3$	1 B2 B3	3
8	(a) $\sqrt{5^2 + (-12)^2} = 13$ (b) $k = -7$ $5 + k + 2 = 0$	1 1 B1	

9				
10	(a)	$\frac{dA}{dx} = 6x - 4$	1	3
	(b)	$\delta A = -0.26$ /jumlah luas permukaan menyusut sebanyak 0.26 cm $\frac{\delta A}{-0.01} = 6x - 4$	2 B1	
11	(a)	3	1	3
	(b)	$k = 1 @ 1$ $[kx]_1^4 - (-3) = 6$	2 B1	
12		$m = -\frac{3}{2}, n = 6$ $m = -\frac{3}{2} @ n = 6$ {either one} $-\frac{3}{2x^2} + \frac{nx^3}{3} + 3x + c @ -\frac{2m}{x^3} + 6x^2 + 3 @ -\frac{3}{2x^2} @ \frac{nx^3}{3}$ $3x @ -\frac{2m}{x^3} @ 6x^2 @ 3 @ setara$	3 B2 B1	3
13	(a)	$d = 3, h = 14$ (either one – no mark)	1	3
	(b)	(0, 5) $f(x) = -x^2 + 6x + 5 @ f(x) = (x - 3)^2 + 14 @ 5$ Accept without $f(x)$	2 B1	
14	(a)	$x = \frac{k \pm \sqrt{k^2 + 20k}}{2k}$ $x = \frac{-(-k) \pm \sqrt{(-k)^2 - 4(k)(-5)}}{2(k)}$	2 B1	4
	(b)	Use POR $k = -\frac{5}{2m}$ $2m = \frac{-5}{k}$	2 B1	

		If use SOR – not identified, no marks		
15		$p = -6, q = 3$ $q = 3 @ p = -6$ $m = \frac{1}{3} @ \frac{1}{3} @ xy = \frac{1}{q}x^2 + \frac{p}{q} @ \frac{p}{q} = -2 @ \frac{1}{q} = \frac{1}{3} @ setara$	3 B2 B1	3
16	(a)	5 Melur The standard deviation of the class 5 Melur is the lowest / Sisihan piawai kelas 5 Melur adalah yang terkecil	1 1	3
	(b)	1	1	
17	(a)	$\frac{25}{49}$ $\left(\frac{3}{7}\right)\left(\frac{3}{7}\right) + \left(\frac{4}{7}\right)\left(\frac{4}{7}\right) @ \left(\frac{3}{7}\right)\left(\frac{3}{7}\right) @ \left(\frac{4}{7}\right)\left(\frac{4}{7}\right) @ \frac{16}{49} @ \frac{9}{49}$	2 B1	4
	(b)	$\frac{72}{343}$ $\left(\frac{3}{7}\right)\left(\frac{4}{7}\right)\left(\frac{3}{7}\right) + \left(\frac{4}{7}\right)\left(\frac{3}{7}\right)\left(\frac{3}{7}\right) @$ $\left(\frac{3}{7}\right)\left(\frac{4}{7}\right)\left(\frac{3}{7}\right) @ \left(\frac{4}{7}\right)\left(\frac{3}{7}\right)\left(\frac{3}{7}\right) @ \frac{36}{343}$	2 B1	
18	(a)	$x = \frac{5}{3}$	1	3
	(b)	$x = 2$ $3(5 - 2x) = \frac{1}{2}(3x)$	1 B1	
19	(a)	$f(x)$	1	3
	(b)	w	1	
	(c)	u	1	
20	(a)	1	1	4
	(b)	(i) 495	1	

		(ii) 79 $12C_{10} + 12C_{11} + 12C_{12}$	1 B1	
21	(a)	$1 - a - b$ $1 - P(x = 2) - P(x = 3)$	1 B1	3
	(b)	$p = \frac{2}{5}$	1	
22	(a)	(i) 10 (ii) 2	1 1	4
	(b)	0.06681 $P\left(z \geq \frac{13 - 10}{2}\right)$	1 B1	
23	(a)	$\frac{11}{12}\pi \text{ rad}$	1	3
	(b)	39.04cm Panjang lengkok PQ = $\frac{11}{12}\pi \times 8 @ (23.04 + 8 + 8)$	1 B1	
24		$x = 90^0, 120^0, 240^0, 270^0$ $\cos x = -1, \cos x = -\frac{1}{2} @ (\cos x + 1)(2 \cos x + 1)$ $2(1 - \cos^2 x) - 3 \cos x = 3$	1 B2 B1	3
25		(i) $\frac{1}{2h^2-1}$ $\frac{1}{\cos 2x} @ \frac{1}{2 \cos^2 x - 1}$ (ii) h $\sin 90 \cos x + \cos 90 \sin x$	1 B1 1 B1	4

