★ ★

Modul Pintas Tingkatan 5

Peperiksaan Percubaan SPM 2018

Skema Jawapan Matematik Tambahan

Kertas 1 37472/1

No	Solution and Marks Scheme	Sub Marks	Total Marks
1.	$\frac{1}{4}$ $x = 3 - 3x - 2$ $3^{3(1-x)}$	3 B2 B1	3
2	2950 $\frac{20}{2}(100 + 195)$ $a = 100$	3 B2 B1	3
3	$a = 21$ $\frac{\sum x + a + a - 6}{8} = 27$ 180	3 B2 B1	3
4	$h = 1$ $k = 16$ $p = 15$	1 1 1	3
5	$k = 2$ $\frac{1}{2}\left\|(k - 8 - 4k) - (4 - k - 8k)\right\| = 0$	2 B1	2
6	$\frac{1}{13}\begin{pmatrix}12\\5\end{pmatrix}$ $\sqrt{12^2 + 5^2}$	2 B1	2
7	$-3\underline{x} + \underline{y}$ $\frac{1}{2}(-2\underline{x} - 3\underline{y} - 4\underline{x} + 5\underline{y})$ $\frac{1}{2}(\overline{LK} + \overline{KN})$	3 B2 B1	3
8	$p = 100$ and $q = 15$ $p = 100$ or $q = 15$ $p + 7q = 205$ or $\frac{12}{2}[2p + 11q] = 2190$	3 B2 B1	3

No	Solution and Marks Scheme	Sub Marks	Total Marks
9	h =16 and k = 32 r =2 a = 8 or $T_4 = 64$	3 B2 B1	3
10	(a) $y = 10b^t$ $\log_{10} \frac{y}{b^t} = 1$ $\log_{10} b^t$ or $\log_{10} y - \log_{10} b^t = 1$ (b) $b = 2$	3 B2 B1 1	4
11	$k = \frac{4}{5}$ $8 + [10k(4) - 10(k)(2)] = 24$ $8 + [10kx]_2^4 = 24$	3 B2 B1	3
12	58.8091 $\frac{1}{2} \times 17^2 \times 1.25$ or $\frac{1}{2} \times (15+12)(9.0234)$ $\frac{1}{2} \times 17^2 \times 1.25 - \frac{1}{2} \times (15+12)(9.0234)$ $\tan 71.61 = \frac{CE}{3}$	4 3 B2 B1	4
13	32 $4^2(2)$ $r = 4$, $h = 2$ $12r - 3r^2 = 0$	4 B3 B2 B1	4
14	(a) 0.175 $4.2\pi = 8\pi(3) \times \frac{dr}{dt}$ or equivalent (b) 6.3π $4\pi(3)^2 \times 0.175$	2 B1 2 B1	4
15	(a) $-1\frac{1}{119}$	2	4

No	Solution and Marks Scheme	Sub Marks	Total Marks
	$\dfrac{2\left(-\dfrac{5}{12}\right)}{1-\left(-\dfrac{5}{12}\right)^2}$	B1	
	(b) $\dfrac{5}{\sqrt{26}}, -\dfrac{5}{\sqrt{26}}$	2	
	$\cos^2\dfrac{1}{2}A = \dfrac{\dfrac{12}{13}+1}{2}$	B1	
16	$99.74°$, $170.27°$, $279.74°$, $350.27°$	3	3
	$\sin 2x = -\dfrac{1}{3}$	B2	
	$2\sin x\cos x = -\dfrac{1}{3}$	B1	
17	$A(-2,0)$ and $B\left(0,-\dfrac{2}{3}\right)$	3	3
	$A(-2,0)$ or $B\left(0,-\dfrac{2}{3}\right)$	B2	
	$y^2 = -\dfrac{1}{3}x^2 - \dfrac{2}{3}$	B1	
18	$x^2 + y^2 - 6y - 9x + 26 = 0$	3	3
	$\left(\dfrac{y-4}{x-6}\right)\left(\dfrac{y-2}{x-3}\right) = -1$ or equivalent	B2	
	$m = \dfrac{y-4}{x-6}$ and $m = \dfrac{y-2}{x-3}$	B1	
19	(a) 360 $^1P_1 \times {}^3P_2 \times {}^5P_3$	2 B1	4
	(b) 72 $^1P_1 \times {}^3P_2 \times {}^1P_1 \times {}^5P_3$	2 B1	
20	(a) $\dfrac{11}{105}$	2	4
	$\dfrac{12}{36} \times \dfrac{11}{35}$	B1	
	(b) $\dfrac{27}{70}$	2	
	$\dfrac{27}{36} \times \dfrac{9}{35} + \dfrac{9}{36} \times \dfrac{27}{35}$	B1	

21	5 $a=-1$, $b=15$ $8a+b=7$ or $2a+b=13$	3 B2 B1	3
22	$p=10$, $p=-6$ $\alpha=2$, $\alpha=-6$ $2\alpha+4=-(2-p)$ and $\alpha(\alpha+4)=12$	3 B2 B1	3
23	(a) 32.44 $\frac{X-27}{6.4}=0.85$ (b) 0.8023	2 B1 1	3
24	0.9295 $1-{}^{9}C_{0}(0.6)^{9}-{}^{9}C_{1}(0.4)(0.6)^{8}$ ${}^{9}C_{0}(0.6)^{9}$ or ${}^{9}C_{1}(0.4)(0.6)^{8}$	3 B2 B1	3
25	(a) 9 (b) 2 $\frac{1(3)+2(7)+3(10)+4x+5(6)}{3+7+10+x+6}>3$	1 2 B1	3