


Modul Pintas Tingkatan 5
Peperiksaan Percubaan SPM 2018
Skema Jawapan Matematik Tambahan
Kertas 1 3472/1

No	Solution and Marks Scheme	Sub Marks	Total Marks
1.	$-\frac{3}{2}$ $\frac{\frac{4}{r} + 3}{\frac{5}{r} - 2}$	2 B1	2
2	a) $\frac{k}{(2-3x)^8} + c$ b) $-71\frac{1}{9}$ $\left[\frac{k}{(2-3x)^8}\right]_0^2$	1 2 B1	3
3	(a) $-4x + 8y$ (b) $3x + 2y$ $\frac{3}{4}(4x - 8y)$ or $\frac{1}{4}(8y - 4x)$	1 2 B1	3
4	$h = -\frac{4}{3}$ and $k = \frac{13}{9}$ $h = -\frac{4}{3}$ or $k = \frac{13}{9}$ $-h + 6k = 10$ and $2h - 3k = -7$ $-h + 6k = 10$ or $2h - 3k = -7$	4 B3 B2 B1	4
5	(a) -5 (b) $-\frac{3}{5}$ $\frac{\log_3 x}{\log_3 m}$ or $3\left(-\frac{1}{5}\right)$	1 2 B1	3
6	$\frac{1}{3}$ $6x = 2$ or $12^{6x} = 12^2$ $2^{12x} \cdot 3^{6x}$ OR Seen $2^{3(4x)}$ or $3^{3(2x)}$ or 12^2	3 B2 B1	3

No	Solution and Marks Scheme	Sub Marks	Total Marks
7	<p>a of P = 4 , and a of Q= 6 a of P = 4 , or a of Q= 6</p> <p><u>let P = T_4 of P and Q= T_4 of Q</u> $\frac{1}{8} \left(\frac{2}{3} Q \right) - \frac{1}{64} Q = \frac{13}{32}$ or $\frac{1}{8} P - \frac{1}{64} \left(\frac{3}{2} P \right) = \frac{13}{32}$</p> <p>$S_{\infty}$ of P = 2a or S_{∞} of Q = $\frac{4}{3}a$ T_4 of P = $\frac{1}{8}$ or T_4 of Q = $\frac{1}{64}$</p>	<p>4 B3</p> <p>B2</p> <p>B1</p>	4
8	<p>14 $p + 1 - 11 = 19 - p - 1$</p>	<p>1 B1</p>	2
9	<p>a) $\frac{2}{3}$ b) $\frac{4}{7}$ $f^{-1}(x) = \frac{2x}{1+3x}$ or $\frac{x}{2-3x} = 2$</p>	<p>1</p> <p>2</p> <p>B1</p>	3
10	<p>(a) -3 b) $p = 3$ and $q = -5$ $2p = 6$ or $2q + 3 = -7$ or $f[g(x)] = \frac{2p}{x} + 2q + 3$</p>	<p>1</p> <p>2</p> <p>B1</p>	3
11	<p>a) $-2(x+4)^2 + 8 + k$ $-2 \left[x^2 + 8x + \left(\frac{8}{2} \right)^2 - \left(\frac{8}{2} \right)^2 \right] + k - 24$ or <u>other method</u> $-2 \left[x + \left(\frac{-16}{2(-2)} \right)^2 \right] + \frac{4(-2)(k-24) - (-16)^2}{4(-2)}$</p> <p>(b) $p = -4$ and $k = -6$ $p = -4$ or $k = -6$ or seen $8 + k = 2$</p>	<p>2</p> <p>B1</p> <p>2</p> <p>B1</p>	4
12	<p>$-2 \leq p \leq -1$ $(p+2)(p+1) \leq 0$ or  $p^2 + 3p + 2 \leq 0$</p>	<p>3</p> <p>B2</p> <p>B1</p>	3

No	Solution and Marks Scheme	Sub Marks	Total Marks
13	$p = -\frac{2}{3}$ and $q = 4$ $q^2 + 24 \left(\frac{6-3q}{9}\right) = 0$ or $\left(\frac{6-9p}{3}\right)^2 + 24p = 0$ $9p + 3q = 6$ or $q^2 + 24p = 0$	3 B2 B1	3
14	$9^{\circ}44'$, $80^{\circ}16'$, $189^{\circ}44'$, $260^{\circ}16'$ or 9.73° , 80.27° , 189.73° , 260.27° $9^{\circ}44'$, $80^{\circ}16'$ and $189^{\circ}44'$, or $260^{\circ}16'$ 9.73° , 80.27° and 189.73° , or 260.27° $2\theta = 19^{\circ}28'$, $160^{\circ}32'$, $379^{\circ}28'$, $520^{\circ}32'$ or 19.47° , 160.53° , 379.47° , 520.53° $\sin 2\theta = \frac{1}{3}$ or $2 \sin \theta \cos \theta = \frac{1}{3}$	4 B3 B2 B1	4
15	a) $1 - 2p^2$ b) $\frac{-\sqrt{1-p^2}+1}{2}$ $\left(\cos^2 \frac{\mu}{2}\right) = \frac{\cos^2 \mu + 1}{2}$	1 2 B1	3
16	2.618 radian $50\pi - 50\theta = 10\theta$ or $\frac{\frac{1}{2}(5)^2(\pi - \theta)}{\frac{1}{2}(2)^2\theta} = \frac{5}{4}$ Area of sector OPR = $\frac{1}{2}(5)^2(\pi - \theta)$ or Area of sector OSQ = $\frac{1}{2}(2)^2\theta$	3 B2 B1	3
17	$h = 1.5$ or $\frac{3}{2}$ $h^3 = \frac{27}{8}$ $\left[\frac{2y^3}{3}\right]_{-h}^h = 4.5$	3 B2 B1	3
18	$y = 3000x - 5985000$; and 57000 $y = 3000x - 5985000$ gradient, $m = \frac{45000 - 30000}{2010 - 2005}$	3 B2 B1	3
19	(a) $\log_{10} y = (2 \log_{10} p) x + 2$ $\log_{10} y = \log_{10} p^{2x} + \log_{10} 100$ (b) $p = 31.62$ dan $h=2$ $2 \log_{10} p = 3$	2 B1 2 B1	4

No	Solution and Marks Scheme	Sub Marks	Total Marks
20	30.86 $\sum x^2 = 2118$ and new $\bar{x} = 19$ $\sum x = 108$	3 B2 B1	3
21	a) $\frac{2}{9}$ b) $\frac{2}{5}$ $\frac{10}{30} \times \frac{2}{6} + \frac{13}{30} \times \frac{4}{6}$	1 2 B1	3
22	4464 9000 – 4536 Seen $9 \times 9 \times 8 \times 7$	3 B2 B1	3
23	Mean = 2.571, and median = 2.39 $\bar{x} = \frac{128.55}{50}$ 128-3.61+4.16 $\sum x = 128$	4 B3 B2 B1	4
24	a) 0.2787 ${}^8C_3 \left(\frac{2}{5}\right)^3 \left(\frac{3}{5}\right)^5$ b) 5 ${}^nC_n \left(\frac{2}{5}\right)^n \left(\frac{3}{5}\right)^0 = \frac{32}{3125}$ or $\left(\frac{2}{5}\right)^n = \frac{32}{3125}$	2 B1 2 B1	4
25	51.4 $\frac{k - 55}{2.4} = -1.5$ $P(X < k) = 0.0668$	3 B2 B1	3

END OF MARKING SCHEME
PERATURAN PEMARKAHAN TAMAT