

SULIT

PROGRAM GEMPUR KECEMERLANGAN
SIJIL PELAJARAN MALAYSIA 2024
NEGERI PERLIS

SIJIL PELAJARAN MALAYSIA 2024
MATEMATIK TAMBAHAN
Kertas 1
Peraturan Pemarkahan
September

3472/1(PP)

UNTUK KEGUNAAN PEMERIKSA SAHAJA

Peraturan pemarkahan ini mengandungi 16 halaman bercetak

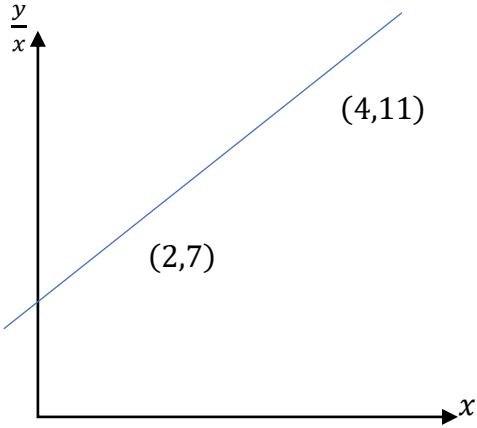
No.	Peraturan Pemarkahan	Markah	Jumlah markah
2	<p data-bbox="188 421 228 454">(a)</p> $\int_1^2 \frac{2(x^2-9)}{3x^2} dx$ $\int_1^2 \frac{2}{3} - \frac{6}{x^2} dx$ $\left[\left(\frac{2}{3}(2) + \frac{6}{2} \right) - \left(\frac{2}{3}(1) + \frac{6}{1} \right) \right] \quad (1\text{m})$ $\frac{-7}{3} \quad (1\text{m})$ <p data-bbox="188 898 228 931">(b)</p> $g(x) = \frac{1}{2} \left(\frac{dy}{dx} \right) \quad (1\text{m})$ $\frac{1}{2} \left[\left(\frac{2(1)-1}{1^2} \right) - \left(\frac{2(-1)-1}{(-1)^2} \right) \right] \quad (1\text{m})$ $2 \quad (1\text{m})$	2	5

No.	Peraturan Pemarkahan	Markah	Jumlah markah
<p>3</p> <p>(a)</p>	$3 \times {}^4P_4$ <div style="text-align: center;"> 1m </div> 72 <div style="text-align: center;"> 1m </div>	2	
<p>(b)</p>	${}^4C_2 \times {}^6C_2 \text{ or } {}^4C_3 \times {}^6C_1$ <div style="text-align: center;"> 1m </div> ${}^4C_2 \times {}^6C_2 + {}^4C_3 \times {}^6C_1 + {}^4C_4$ <div style="text-align: center;"> 1m </div> 115 <div style="text-align: center;"> 1m </div>	3	
			5

No.	Peraturan Pemarkahan	Markah	Jumlah markah
4	<p data-bbox="296 432 611 465">$p = 0.75$, $q = 0.25$</p> <p data-bbox="193 533 933 600">a) $P(x = 3) = {}^{10}C_3(0.25)^3(0.75)^7$ (1m)</p> <p data-bbox="632 689 879 745">0.2503 (1m)</p> <p data-bbox="193 898 914 954">b) $P(x > 8) = P(x = 9) + P(x = 10)$ (1m)</p> <p data-bbox="296 981 1093 1014">$P(x > 8) = {}^{10}C_9(0.75)^9(0.25)^1 + {}^{10}C_{10}(0.75)^3(0.25)^0$</p> <p data-bbox="655 1055 863 1111">0.2440 (1m)</p>	2	4

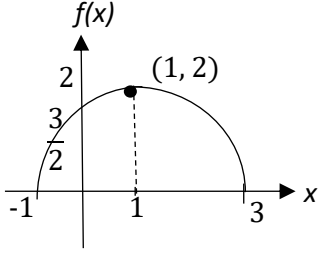
No.	Peraturan Pemarkahan	Markah	Jumlah markah
5	<p data-bbox="188 562 229 600">(a)</p> <p data-bbox="304 562 478 600">Guna $S = r\theta$</p> <p data-bbox="571 555 651 622">1m</p> <p data-bbox="331 636 464 696">$1.1\theta = \frac{21}{27}$</p> <p data-bbox="603 725 751 763">0.7071 rad.</p> <p data-bbox="836 719 906 779">1m</p> <p data-bbox="188 1077 229 1115">(b)</p> <p data-bbox="316 1128 639 1167">$21 = (1.1 + EA)0.7071$</p> <p data-bbox="735 1122 815 1189">1m</p> <p data-bbox="316 1240 660 1301">$21 + \frac{21}{27} + 2(29.70 - 1.1)$</p> <p data-bbox="746 1234 826 1301">1m</p> <p data-bbox="628 1375 756 1413">78.98 cm</p> <p data-bbox="810 1368 880 1429">1m</p>	2	5
		3	

No.	Peraturan Pemarkahan	Markah	Jumlah markah
<p>6</p> <p>(a)</p>	<p>Guna $\vec{AC} = \vec{AO} + \vec{OC}$ atau $\vec{BC} = \vec{BO} + \vec{OC}$ (1m)</p> <p>$\vec{OC} = \begin{pmatrix} 2 \\ 4 \end{pmatrix}$ $\vec{OB} = \begin{pmatrix} 4 \\ -2 \end{pmatrix}$</p> <p>$C(2,4)$ dan $B(4,-2)$ (1m)</p> <p>Guna $\left(\frac{2+4}{2}, \frac{4+(-2)}{2}\right)$ (1m)</p> <p>(3,1) (1m)</p>	<p>4</p>	
<p>(b)</p>	<p>Guna $\vec{AC} = \sqrt{6^2 + 3^2}$ (1m)</p> <p>$\widehat{AC} = \frac{6}{\sqrt{45}}i + \frac{3}{\sqrt{45}}j$ (1m)</p>	<p>2</p>	<p>6</p>

No.	Peraturan Pemarkahan	Markah	Jumlah markah
7	<p>(a)</p>  <p>(4,11)</p> <p>(2,7)</p> <p>Paksi dan garis lurus 1m</p> <p>(2,7) dan (4,11) 1m</p> <p>(b)</p> <p>$k = \frac{11-7}{4-2} = 2$ 1m</p> <p>Ganti (2,7) ke dalam $\frac{y}{x} = 2x + h$ 1m</p> <p>$h = 3$ 1m</p>	2	5
		3	

No.	Peraturan Pemarkahan	Markah	Jumlah markah
8	<p>$y = -6x - 15$ 1m</p> <p>Hapus satu anu (melibatkan satu persamaan linear dan satu persamaan tak linear dalam sebutan m dan n)</p> <p>$3x^2 + 9x - (-6x - 15) = 3$ 1m</p> <p>Selesaikan persamaan kuadratik 1m <u>$ax^2 + bx + c = 0$ for $b \neq 0$</u></p> <p>Pemfaktoran $(x + 4)(x + 1) = 0$</p> <p>Rumus $x = \frac{-(-6) \pm \sqrt{(-6)^2 - 4(1)(-15)}}{2(1)}$</p> <p>1m $x = -4$ atau $x = -1$</p> <p>1m $y = 9$ atau $y = -9$</p>	5	5

No.	Peraturan Pemarkahan	Markah	Jumlah markah
<p>9</p> <p>(a)</p>	$\frac{2}{\sqrt{2}-2} \times \frac{\sqrt{2}+2}{\sqrt{2}+2} \quad (1\text{m})$ $\frac{2(\sqrt{2}+2)}{2-4} \quad (1\text{m})$ $-\sqrt{2}-2 \quad (1\text{m})$	3	7
<p>(b)</p>	$\frac{\log_a hk}{\log_a a^3} \quad (1\text{m})$ $\frac{1}{3} \log_a h + \frac{1}{3} \log_a k \quad (1\text{m})$	2	
<p>(c)</p>	$\log_{a^3} 3q = 1 \quad (1\text{m})$ $q = \frac{a^3}{3} \quad (1\text{m})$	2	

No.	Peraturan Pemarkahan	Markah	Jumlah markah
10	<p>(a) Bentuk \cap <input type="text" value="1m"/></p> <p>Titik maksimum (1,2) <input type="text" value="1m"/></p> <p>$(0, \frac{3}{2}), (-1,0), (3,0)$ <input type="text" value="1m"/></p> 	3	
(b)	$f(x) = \frac{-1}{2}(x + 1)^2 + 2$ <input type="text" value="1m"/>	1	4

No.	Peraturan Pemarkahan	Markah	Jumlah markah
11	(a) $P(0,2)$ 1m	1	
	(b) Guna $\frac{1}{2} \times m_2 = -1$ 1m $m_2 = -2$ Guna $\frac{y-y_1}{x-x_1} = m_2$ atau kaedah yang setara 1m $\frac{y-3}{x-2} = -2$ $y = -2x + 7$ 1m		
	(c) $\left(\frac{1x+4(0)}{1+4}, \frac{1y+4(3)}{1+4}\right) = (2,3)$ $\frac{1x+4(0)}{1+4} = 2$ atau $\frac{1y+4(3)}{1+4} = 3$ 1m $R(10,3)$ 1m	2	

6

No.	Peraturan Pemarkahan	Markah	Jumlah markah
<p>12</p> <p>(a)</p>	$a = 2, \quad r = -3 \quad \boxed{1\text{m}}$ $T_2 = 2(-3)^{2-1} = -6 \quad \textcircled{1\text{m}}$ $T_3 = 2(-3)^{3-1} = 18$ $T_4 = 2(-3)^{4-1} = -54 \quad \textcircled{1\text{m}}$	3	
<p>(b)</p>	<p>Guna $\frac{2-m}{6+2m} = \frac{4-2m}{2-m} \quad \textcircled{1\text{m}}$</p> $m = -2 \quad \boxed{1\text{m}}$	3	6

No.	Peraturan Pemarkahan	Markah	Jumlah markah
<p>13</p> <p>(a)</p> <p>(b)</p> <p>(i)</p> <p>(ii)</p> <p>(iii)</p>	<p>Paksi dan garis lurus 1m</p> <p>$(4,2)$ dan $(-8,-2)$ 1m</p> <p>$f^{-1}(x) = \frac{x+2}{3}$ 1m</p> <p>Gantikan $(-8,-2)$ atau $(4,2)$ ke dalam $f^{-1}(x) = \frac{x+2}{3}$ 1m</p> <p>$f^{-1}(x)$ ialah songsangan bagi $f(x) = 3x - 2$ 1m</p> <p>$-8 \leq x \leq 4$ 1m</p> <p>$\frac{x+2}{3} = 3x - 2$ 1m</p> <p>$x = 1$ 1m</p>	<p>2</p> <p>3</p> <p>1</p> <p>2</p>	<p>8</p>

No.	Peraturan Pemarkahan	Markah	Jumlah markah
<p>14</p> <p>(a)</p>	$\frac{dx}{dh} = 1 + \frac{1}{h^2} = \frac{h^2+1}{h^2} \quad (1m) \quad \frac{dy}{dh} = 2 - \frac{1}{h^2} = \frac{2h^2-1}{h^2} \quad (1m)$ <p>Guna $\frac{dy}{dx} = \frac{dy}{dh} \times \frac{dh}{dx} \quad (1m)$</p> $\frac{2h^2-1}{h^2} \times \frac{h^2}{h^2+1}$ $\frac{2h^2-1}{h^2+1} \quad (1m)$	4	8
<p>(b)</p>	<p>Guna $\frac{dy}{dx} = 0 \quad (1m)$</p> $\frac{2h^2-1}{h^2+1} = 0$ $h = \frac{1}{2} \quad (1m)$ <p>Ganti $h = \frac{1}{2}$ ke dalam $x = h - \frac{1}{h}$ dan $y = 2h + \frac{1}{h} \quad (1m)$</p> $\left(\frac{-3}{2}, 3\right) \quad (1m)$	4	

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No.	Peraturan Pemarkahan	Markah	Jumlah markah
<p>15</p> <p>(a)</p>	<p>Guna $\sin 2x = 2 \sin x \cos x$ (1m)</p> <p>$3(2 \sin x \cos x) = \sin x$</p> <p>$\sin x(6 \sin x - 1) = 0$ (1m)</p> <p>$\sin x = 0$ atau $6 \sin x - 1 = 0$ (1m)</p> <p>$x = 0^\circ, 180^\circ, 360^\circ$ atau $x = 80.41^\circ, 279.59^\circ$ (1m)</p> <p>$x = 0^\circ, 80.41^\circ, 180^\circ, 279.59^\circ, 360^\circ$ (1m)</p> <p>(b)</p> <p>$\tan x = \frac{-4}{3}$ (1m)</p> <p>Guna $\tan x = \frac{2 \tan x}{1 - \tan^2 x}$ (1m)</p> <p>$\frac{2\left(\frac{-4}{3}\right)}{1 - \left(\frac{-4}{3}\right)^2}$</p> <p>$\frac{24}{7}$ (1m)</p>	<p>5</p> <p>3</p>	<p>8</p>