

Bil	Peraturan Pemarkahan	Jumlah
1	<p>(a) <math>r = -2</math> <b>ATAU</b> <math>27, -54, 108, -216, 432, -864, 1728, -3456</math> <b>P1</b></p> <p><math>S_8</math> atau <math>S_5</math> (guna rumus <math>S_n</math>) <b>ATAU</b> <math>T_6 + T_7 + T_8</math> <b>K1</b></p> <p><math>27 \left[ \frac{1 - (-2)^8}{1 - (-2)} \right] - 27 \left[ \frac{1 - (-2)^5}{1 - (-2)} \right]</math> <b>ATAU</b> <math>-864 + 1728 - 3456</math> <b>K1</b></p> <p><math>-2592</math> <b>N1</b></p> <p>(b) <math>\frac{4}{2} [2(27) + (4-1)d] = -2592</math> <b>K1</b></p> <p><math>d = -450</math> <b>N1</b></p>	<b>6</b>
2	<p>(a) <math>-4 \left( x + \frac{24}{2(-4)} \right)^2 + \frac{4(-4)(p) - (24)^2}{4(-4)}</math> <b>K1</b> atau setara</p> <p><math>h = 4</math> <b>N1</b></p> <p><math>k = -3</math> <b>N1</b></p> <p><math>p = -20</math> <b>N1</b></p> <div style="text-align: center;"> </div> <p>Bentuk <b>P1</b></p> <p>Titik maksimum (3,16) dan dua titik iringan (kiri dan kanan titik maksimum) <b>P1</b></p> <p>(b) ketinggian maksimum = 36 m <b>N1</b></p> <p>Jarak mengufuk = 3 m <b>N1</b></p>	<b>8</b>

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3	$\left. \begin{aligned} p+q+r &= 37000 \\ q &= r+2p \\ 0.036p+0.05q+0.045r &= 1725 \end{aligned} \right\} \begin{aligned} &\mathbf{P1} \text{ satu persamaan betul} \\ &\mathbf{P1} \text{ semua betul} \end{aligned}$ $p+(r+2p)+r = 37000 \quad \mathbf{K1} \text{ kaedah penghapusan atau penggantian}$ <p>atau</p> $0.036p+0.05(r+2p)+0.045r = 1725$ $0.136p+0.095\left(\frac{37000-3p}{2}\right) = 1725 \text{ atau setara}$ <p style="text-align: center;"><math>\mathbf{K1}</math> kaedah penghapusan atau penggantian</p> $p = RM5000 \quad \mathbf{N1}$ $q = RM21000 \quad \mathbf{N1}$ $r = RM11000 \quad \mathbf{N1}$	7

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4	<p>(a) <math>\frac{\text{panjang lengkok}}{\theta} = \frac{\text{lilitan bulatan}}{2\pi}</math></p> <p><math>\frac{s}{\theta} = \frac{2\pi j}{2\pi}</math></p> <p><math>s = j\theta</math></p> <p>(b) <math>\angle PSQ = 1.5</math></p> <p><math>SQ = \frac{9}{1.5}</math> and <math>OR = \frac{3}{2}(6)</math></p> <p><math>\theta = \frac{8.5}{9}</math></p> <p>0.9444</p>	<p><b>P1 atau setara</b></p> <p><b>K1</b></p> <p><b>N1</b></p> <p><b>P1</b></p> <p><b>K1</b></p> <p><b>K1</b></p> <p><b>N1</b></p> <p style="text-align: center;"><b>7</b></p>
5	<p>(a) <math>0 = k(-1) + 8</math></p> <p><math>k = 8</math></p> <p>(b) <math>y = \int (8x + 8) dx</math></p> <p><math>= \frac{8x^2}{2} + 8x + c</math></p> <p><math>-6 = 4(-1)^2 + 8(-1) + c</math></p> <p><math>y = 4x^2 + 8x - 2</math></p> <p>(c) <math>y = 4(1)^2 + 8(1) - 2</math></p> <p><math>m = 10</math></p>	<p><b>K1</b></p> <p><b>N1</b></p> <p><b>K1</b></p> <p><b>K1</b></p> <p><b>N1</b></p> <p><b>K1</b></p> <p><b>N1</b></p> <p style="text-align: center;"><b>7</b></p>

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6	<p>(a) (i) <math>\vec{JL} = \vec{JO} + \vec{OL}</math> atau <math>\vec{JL} = \vec{JK} + \vec{KL}</math> atau <math>\vec{OM} = \vec{OJ} + \vec{JM}</math>  atau <math>\vec{OM} = \vec{OL} + \vec{LM}</math> [Hukum segi tiga] <b>K1</b></p> <p><math>\frac{3}{2}\underline{a} - 3\underline{b}</math> <b>N1</b></p> <p>(ii) <math>\frac{5}{4}\underline{a} + \frac{5}{2}\underline{b}</math> <b>N1</b></p> <p>(b) (i) <math>2h\underline{b} = \frac{1}{2}\left(-\frac{3}{2}\underline{a} + 3\underline{b}\right) + \frac{3}{5}\left(\frac{5}{4}\underline{a} + \frac{5}{2}\underline{b}\right)</math> or equivalent <b>K1</b></p> <p><math>2h = 3</math> (compare) or equivalent <b>K1</b></p> <p><math>h = \frac{3}{2}</math> <b>N1</b></p> <p>(ii) <math> \vec{OM}  = \sqrt{\left[\frac{5}{4}(2)\right]^2 + \left[\frac{5}{2}(1)\right]^2}</math> <b>K1</b></p> <p><math>\frac{5\sqrt{2}}{2}</math> atau 3.536 <b>N1</b></p>	<b>8</b>

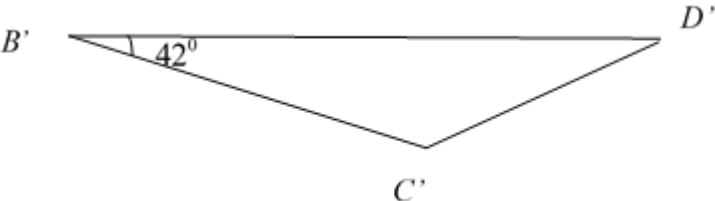
Bil	Peraturan Pemarkahan	Jumlah
7	<p>(a) <math>(3^{p+2})3^1 + (3^{p+2})3^{-3} - (3^{p+2})3^{-1}</math> <b>K1 or equivalent</b></p> <p><math>3^{p+2} \left( 3 + \frac{1}{27} - \frac{1}{3} \right)</math> <b>K1</b></p> <p><math>\frac{73}{27}(3^{p+2})</math> <b>N1</b></p> <p>(b)(i) <math>\frac{73}{27}(k) = \sqrt{\frac{73}{27}}</math> <b>(hence)</b></p> <p><math>k = \frac{\sqrt{1971}}{27} \times \frac{27}{73}</math> <b>K1</b></p> <p><math>k = \frac{3\sqrt{219}}{73}</math> <b>N1</b></p> <p>ii) <math>e^{2\ln k} = k^2</math> <b>K1</b></p> <p><math>= \frac{27}{73}</math> <b>N1</b></p>	7

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8	<p>(a) <math>\frac{dy}{dx} = x^2 - 2px + q</math> <b>K1</b></p> <p><math>(1)^2 + 2p(1) + q = 0</math> atau <math>(2)^2 + 2p(2) + q = 0</math> <b>K1</b></p> <p>Selesaikan persamaan serentak <b>K1</b></p> <p><math>p = \frac{3}{2}</math> <b>N1</b></p> <p><math>q = 2</math> <b>N1</b></p> <p>(b) <math>m_T = (3)^2 - 3(3) + 2</math></p> <p><math>m_T = 2</math></p> <p><math>m_N = -\frac{1}{2}</math> <b>K1</b></p> <p><math>\left(\frac{5}{2}\right) = -\frac{1}{2}(3) + c</math> atau <math>y - \frac{5}{2} = -\frac{1}{2}(x - 3)</math> <b>K1</b></p> <p><math>x + 2y - 8 = 0</math> <b>N1</b></p> <p><math>a = 1, b = 2</math> dan <math>c = -8</math> <b>N1</b></p>	<b>10</b>

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9	(a) (i) Titik tengah $AC = (5,3)$ ATAU cerun serenjang = $-\frac{2}{3}$ <b>P1</b>	<b>10</b>
	$y - 3 = -\frac{2}{3}(x - 5)$ <b>K1</b>	
	$3y + 2x = 19$ <b>N1</b>	
	(ii) penyelesaian persamaan serentak <b>K1</b>	
	$13y = 13$ atau $\frac{26}{3}x = \frac{208}{3}$ $x = 8$	
	$B(8,1)$ <b>N1</b>	
	(b) (i) $\frac{x+8}{2} = 5$ atau $\frac{y+1}{2} = 3$ <b>K1</b>	
	$D(2,5)$ <b>N1</b>	
	(ii) $AC = \sqrt{(9+3)^2 + (9-1)^2}$ or	
	$BD = \sqrt{(1-5)^2 + (8-2)^2}$ <b>K1</b>	
$\frac{AC}{BD} = \frac{\sqrt{208}}{\sqrt{52}} = \frac{4\sqrt{13}}{2\sqrt{13}}$ <b>K1</b>		
$AC = 2BD$ <b>N1</b>		

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10	<p>(a) <math>\frac{dy}{dx} = -6(2x-1)^{-3} (2)</math> <b>K1</b></p> <p><math>3 = -12(1)^2 + c</math> <b>K1</b> atau setara</p> <p><math>y = -12x + 15</math> <b>N1</b></p> <p>(b) (i) <math>\int_2^3 3(2x-1)^{-2} dx</math> <b>P1</b></p> <p><math>\left[ \frac{3(2x-1)^{-1}}{-1(2)} \right]_2^3</math> <b>K1</b></p> <p><math>\frac{3(5)^{-1}}{-2} - \frac{3(3)^{-1}}{-2}</math> <b>K1</b></p> <p><math>\frac{1}{5}</math> <b>N1</b></p> <p>(ii) <math>\pi \int_2^3 (3(2x-1)^{-2})^2 dx</math> <b>P1</b></p> <p><math>\pi \left[ \frac{9(2x-1)^{-3}}{(-3)(2)} \right]_2^3</math> <b>K1</b></p> <p><math>\frac{49}{1125} \pi</math> <b>N1</b></p>	<b>10</b>



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13	<p>(a) <math>\sin A = \frac{h}{b}</math> or <math>\sin B = \frac{h}{a}</math> <b>P1</b></p> <p><math>b \sin A = a \sin B</math> <b>K1</b></p> <p><math>\frac{a}{\sin A} = \frac{b}{\sin B}</math> atau <math>\frac{\sin A}{a} = \frac{\sin B}{b}</math> <b>N1</b></p> <p>b) (i) <math>\frac{\sin \angle BCD}{15} = \frac{\sin 42^\circ}{10.6}</math> <b>K1</b></p> <p><math>\angle BCD = 71.24^\circ</math> <b>N1</b></p> <p>(ii) <math>15^2 = 9^2 + 11^2 - 2(9)(11) \cos \angle BAD</math> <b>K1</b></p> <p><math>\angle BAD = 96.67^\circ</math> <b>N1</b></p> <p><math>\frac{1}{2} \times 9 \times 11 \times \sin 96.67^\circ</math> or <math>\frac{1}{2} \times 15 \times 10.6 \times \sin 66.76^\circ</math> <b>K1</b></p> <p>122.21 <b>N1</b></p> <p>(iii)  <b>N1(sudut cakah)</b></p>	<b>10</b>

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14	<p>(a) <math>\frac{Q_{2020}}{Q_{2017}} = \frac{p}{100}</math> atau <math>\frac{Q_{2019}}{Q_{2017}} = \frac{130}{100}</math></p> <p><math>\frac{Q_{2020}}{Q_{2019}} \times 100 = \frac{p}{100} \times \frac{100}{130} \times 100</math> <b>ATAU</b> <math>\frac{(130)(I)}{p} = 100</math> <b>K1</b></p> <p><math>\frac{10p}{13}</math> <b>N1</b></p> <p>(b)(i) <math>\frac{Q_{2021}}{8} \times 100 = 90</math> <b>K1</b></p> <p><i>RM7.20</i> <b>N1</b></p> <p>(ii) <math>x = 15</math></p> <p><math>\frac{30y + (90)(45) + (140)(10) + (180)(15)}{100} = 122</math> <b>K1</b></p> <p><math>y = 135</math> <b>N1</b></p> <p>(iii) <math>\frac{122 \times 130}{100}</math> atau setara <b>K1</b></p> <p>158.6 <b>N1</b></p> <p><math>158.6 = \frac{Q_{22}}{64} \times 100</math> <b>K1</b></p> <p><i>RM101.50</i> <b>N1</b></p>	<p style="text-align: center;"><b>10</b></p>

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15	(a) $\frac{dv}{dt} = 12 - 6t = 0$	<b>10</b>
	$t = 2$	
	$7 \text{ ms}^{-1}$	
	(b) $s = \int (12t - 5 - 3t^2) dt$	
	$s = 6t^2 - 5t - t^3 + c$	
	$s = 6t^2 - 5t - t^3$	
	(c) $t(t^2 - 6t + 5) = 0$	
	$t(t - 1)(t - 5)$	
	$t = 1, t = 5$	
	(d) $a = 12 - 6(3)$	
	$a = -6 \text{ ms}^{-2}$	