

**SKEMA PEMARAKAHAN  
KERTAS 1 SET 1**

ITEM	PENYELESAIAN DAN SKEMA MARKAH	SUB	JUMLAH
1	(a) $A(0, 6)$ (b) $f(x) = (x - \frac{5}{2})^2 - \frac{1}{4}$ $C(\frac{5}{2}, -\frac{1}{4})$	1 1 1	3
2	Any solutions that satisfied the answer. $x = 2, y = 3, z = 4$	3 3	6
3	$(2)^2 - 4(-1)(7 - h) > 0$ $h < 8$	1 1	2
4	$x + y + 6 = 10$ $x = 4 - y$ or $y = 4 - x$ $\frac{(105 \times x) + (110 \times 2) + (120 \times 4) + (125 \times y)}{10} = 118$ $21x + 25y = 96$ $21(4 - y) + 25y = 96$ $y = 3$ $x = 1$	1 1 1 1 1	5
5	(a) see $(\frac{1250}{2})^n$ or use log $n = -\frac{1}{4}$ (b) see conjugate $\frac{\sqrt{5} - \sqrt{2}}{\sqrt{5} - \sqrt{2}}$ $\frac{5(\sqrt{5} - \sqrt{2})}{3}$ (c) see $\log_3 3^4$ $x^2 y = 81x$ $y = \frac{81}{x}$	1 1 1 1 1 1	7

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6	$v = ht - \frac{kt^2}{2} + c \quad , \quad \text{where } v = 0, t = 0, c = 0$ $h = 2k \quad \dots\dots\dots \textcircled{1} \quad 4 = h - 2k \quad \dots\dots\dots \textcircled{2}$ $h = 8$ $k = 4$	<p>1</p> <p>1</p> <p>1</p> <p>1</p>	<b>4</b>
7	<p>(a) <math>T_4 = S_4 - S_3 \quad \text{or} \quad (20 - 16) - (15 - 9)</math></p> <p><math>T_4 = -2</math></p> <p>(b) <math>S_{10} - S_2 \quad \text{or} \quad (50 - 100) \quad \text{or} \quad (10 - 4)</math></p> <p><math>= (50 - 100) - (10 - 4)</math></p> <p><math>= -56</math></p>	<p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>1</p>	<b>5</b>
8	<p>(a) <math>\log_{10} y = \log_{10} p + x(\log_{10} q)</math></p> <p><math>Y = \log_{10} y</math></p> <p><math>m = \log_{10} q</math></p> <p><math>X = x</math></p> <p><math>c = \log_{10} p</math></p> <p>(b) <math>m = \frac{3}{2}</math></p> <p><math>\frac{x}{y} = \frac{3}{2} \left( \frac{1}{x^2} \right) - 5</math></p> <p><math>y = \frac{2x^3}{3 - 10x^2}</math></p>	<p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>1</p>	<b>8</b>
9	<p>(a) <math>(x, y) = \left( \frac{5 - 27}{4}, \frac{5 - 6}{4} \right)</math></p> <p><math>C = \left( -\frac{11}{2}, -\frac{1}{4} \right)</math></p> <p>(b) <math>\text{Luas } ABC = \frac{1}{2} \begin{vmatrix} 6 &amp; 0 &amp; -4 &amp; 6 \\ 4 &amp; 1 &amp; -1 &amp; 4 \end{vmatrix} \quad \text{or equivalent}</math></p> <p><math>\text{Luas } ABC = 0, \text{ maka titik - titik } A, B \text{ dan } C \text{ adalah segaris}</math></p>	<p>1, 1</p> <p>1</p> <p>1</p> <p>1</p>	<b>5</b>

ITEM	PENYELESAIAN DAN SKEMA MARKAH	SUB	JUMLAH
10	(a) $\frac{dy}{dt} = 1 - 4t$ and $\frac{dt}{dx} = \frac{1}{4}$ $\frac{dy}{dx} = \frac{2 - x}{4}$ (b) $\delta x = 2.98 - 3 = -0.02$ $\delta y = \left(\frac{2 - 3}{4}\right)(-0.02)$ $\delta y = 0.005$	1, 1 1 1 1 1	6
11	(a) (i) $n = 1, 2, 3, 4, 5, 6$ (ii) $n = r + s$ (b) (i) ${}^6P_6$ 720 (ii) ${}^4P_1 \times {}^4P_4 \times {}^2P_1$ 192	1 1 1 1 1 1	6
12	$\frac{BD}{\sin 70^\circ} = \frac{9}{\sin 31^\circ}$ $BD = 16.42 \text{ cm}$ $\text{Luas } \Delta ABD = \frac{1}{2}(9)(16.42) \sin 79^\circ$ $= 72.53 \text{ cm}^2$ <i>see 110.32° or use kosine rule or equivalent</i> $\text{Luas } \Delta BCD = \frac{1}{2}(5)(14) \sin 110.32^\circ$ $= 32.82 \text{ cm}^2$ $= 72.53 + 32.82$ $= 105.35 \text{ cm}^2$	1 1 1 1 1 1	7

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13	<p>(a) (i) <math>\vec{OR} = \frac{1}{3}(15x) + h\vec{PB}</math>  <math>= (5 - 5h)x + 12hy</math></p> <p>(ii) <math>\vec{OR} = \frac{3}{4}(12y) + k\vec{QA}</math>  <math>= 15kx + (9 - 9k)y</math></p> <p>(b) <math>(5 - 5h)x + 12hy = 15kx + (9 - 9k)y</math>  <math>1 - h = 3k \quad \text{or} \quad 12h = 9 - 9k</math>  <math>12(1 - 3k) = 9 - 9k</math>  <math>k = \frac{1}{9}</math>  <math>h = \frac{2}{3}</math></p>	<p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>1</p>	8
14	<p>(a) <math>2 \sin A \cos A + \cos A = 0</math>  <math>\cos A = 0 \quad \text{or} \quad 2 \sin A + 1 = 0</math>  <math>A = 90^\circ, 270^\circ \quad \text{or} \quad A = 210^\circ, 330^\circ</math>  <math>A = 90^\circ, 210^\circ, 270^\circ, 330^\circ</math></p> <p>(b) (i) <math>a = 2, \quad b = \frac{1}{2}, \quad c = -1</math></p> <p>(ii) 1</p>	<p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>1, 1, 1</p> <p>1</p>	8
15	<p>(a) <math>\text{sudut AEB} = \frac{\pi}{3}</math>  <math>\text{sudut AEB} = \frac{\pi}{6} \text{ rad}</math></p> <p>(b) <math>\text{see } 5 \tan 60^\circ \left(\frac{\pi}{3}\right) \text{ or } 5 \left(\frac{2\pi}{3}\right) \text{ or } 2(5)\cos 30^\circ</math>  <math>\text{Perimeter} = 10 + \frac{5\pi\sqrt{3}}{3} + 5\sqrt{3} + \frac{10\pi}{3}</math>  <math>= 41.58 \text{ cm}</math></p> <p>(c) <math>\text{Luas} = \frac{1}{2}(5)^2 \left(\frac{2\pi}{3}\right) - \frac{1}{2}(5)^2 \sin 120^\circ</math>  <math>= 15.35 \text{ cm}^2</math></p>	<p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>1, 1</p> <p>1</p>	8