

**BAHAN KECEMERLANGAN
SPM**

**SKEMA
BK 9**

**MATEMATIK
TAMBAHAN**

SULIT

<p>7</p>	<p>$p = \frac{1}{4}$ 3</p> <p>$\frac{2p}{1-3p} = 2$ B2</p> <p>$\log_2 \left(\frac{2p}{1-3p} \right) = 1$ B1</p>	<p>3</p>
<p>8</p>	<p>(a) 4 1</p> <p>(b) 2 2</p> <p>6 - 4 or 10 - 2(4) B1 for using S_2 in $T_2 = S_2 - S_1$ or $S_2 - 2S_1$</p>	<p>3</p>
<p>9</p>	<p>(a) $a = 64$ and $r = \frac{1}{2}$ 2</p> <p>$ar^3 = 8$ or $ar^3 + ar^4 = 12$ or $8 + 8r = 12$ B1</p> <p>(b) 128 2</p> <p>$\frac{64^*}{1 - \frac{1}{2}}$ B1 (* follow through from the value of a and r)</p>	<p>4</p>
<p>10</p>	<p>$p = -3$, $q = \frac{1}{2}$ (both) (3)</p> <p>$p = -3$ or $q = \frac{1}{2}$ B2</p> <p>$\frac{1}{y} = -px + \frac{1}{q}$</p> <p>$m = 3$ or $c = 2$ B1</p>	<p>3</p>

SULIT

11	$k = -4$ dan $h = -\frac{1}{3}$ $k = -4$ atau $h = -\frac{1}{3}$ $\frac{k-2}{3} = -2$ atau $3h = (k-2) + 5$	3 B2 B1	3
12	14.25 $Q_1 = 10.5 + \left(\frac{\frac{1}{4}(40) - 7}{8} \right) 10$ $L = 10.5$ or $F = 7$ and $f = 8$	3 B2 B1	3
13	(a) $k = 3$ (b) $m = 6$ $3(m - 2) = 12$	1 2 B1	3
14	(a) $8\underline{i} + 6\underline{j}$ or $\begin{pmatrix} 8 \\ 6 \end{pmatrix}$ $3\begin{pmatrix} 2 \\ 5 \end{pmatrix} - \begin{pmatrix} -2 \\ 9 \end{pmatrix}$ or $3(2\underline{i} + 5\underline{j}) - (-2\underline{i} + 9\underline{j})$ (b) $\frac{4\underline{i} + 3\underline{j}}{5}$ $\sqrt{8^2 + 6^2} @ 10$	2 B1 2 B1	4

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15	<p>(a) $-\frac{13}{12}$</p> <p>$\frac{1}{\cos A}$</p> <p>(b) $-\frac{16}{63}$</p> <p>$\frac{\frac{5}{12} + \left(-\frac{3}{4}\right)}{1 - \frac{5}{12}\left(-\frac{3}{4}\right)}$</p>	<p>2</p> <p>B1</p> <p>2</p> <p>B1</p> <p>4</p>
16	<p>(a) ${}^5P_4 = 120$</p> <p>(b) 72</p> <p>${}^4P_3 \times {}^3P_1$ atau $4 \times 3 \times 2 \times 3$</p>	<p>1</p> <p>2</p> <p>B1</p> <p>3</p>
17	<p>(a) ${}^6C_3 \times {}^5C_2 = 200$</p> <p>(b) 281</p> <p>${}^6C_3 \times {}^5C_2 + {}^6C_4 \times {}^5C_1 + {}^6C_5 \times {}^5C_0$</p>	<p>1</p> <p>2</p> <p>B1</p> <p>3</p>
18	<p>(a) $\theta = 1.5$ radian</p> <p>$\frac{1}{2}(8)^2(\theta) = 48$</p> <p>(b) 12 cm</p> <p>$8(1.5)$</p>	<p>2</p> <p>B1</p> <p>2</p> <p>B1</p> <p>4</p>

SULIT

19	(a) $30x + 60$ (b) -60 for $\frac{dy}{dx} = 0$ @ $x = -2$	1 2 B1	3
20	$\frac{p}{56}$ $\delta r = \frac{1}{2\pi(28)} \times p\pi$ $\frac{dA}{dr} = 2\pi r$ or $r = 28$	3 B2 B1	3
21	$-\frac{8}{9}$ $\left[\frac{1}{(2(1)+1)^2} \right] - \left[\frac{1}{(2(-1)+1)^2} \right]$ $\frac{1}{3} \left[\frac{3}{(2x+1)^2} \right]_{-1}^1$	3 B2 B1	3
22	(a) $\frac{1}{2}$ $p(6) - 3 = 0$ (b) $y = \frac{x^2}{4} - 3x + 8$ $y = \frac{x^2}{4} - 3x + c$	2 B1 2 B1	4
23	(a) 0.063 (b) 0.91 $0.7 + 0.7 \times 0.3$	1 2 B1	3

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24	<p>(a) 0.1014</p> ${}^8C_3 \left(\frac{5}{8}\right)^3 \left(\frac{3}{8}\right)^5$ <p>(b) 0.8649 // 0.8650</p> $P(X \geq 2) = 1 - {}^8C_0 \left(\frac{3}{8}\right)^0 \left(\frac{5}{8}\right)^8 - {}^8C_1 \left(\frac{3}{8}\right)^1 \left(\frac{5}{8}\right)^7$	<p>2</p> <p>B1</p> <p>2</p> <p>B1</p> <p>4</p>
25	<p>(a) 6.6</p> $3.5 = \frac{15 - \mu}{2.4}$ <p>(b) 0.5662</p> $z \leq \frac{7 - 6.6}{2.4}$	<p>2</p> <p>B1</p> <p>2</p> <p>B1</p> <p>4</p>

END OF MARK SCHEME