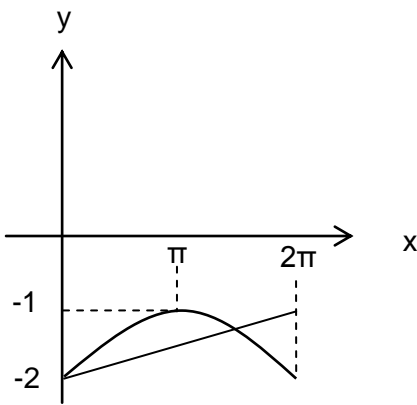


**SKEMA PEMARKAHAN
PEPERIKSAAN PERCUBAAN SPM 2017 KM6/10 PPDU**

**MATEMATIK TAMBAHAN
KERTAS 2**

NO	SKEMA	MARKAH
BAHAGIAN A		
1	$x - 1 + y + 2 = 9 \dots\dots\dots (1)$ $(x - 1)(y + 2) = 20 \dots\dots\dots (2)$ $y = 8 - x$ $x(8 - x) + 2x - (8 - x) = 22$ $x^2 - 11x + 30 = 0$ $(x - 6)(x - 5) = 0$ $x = 6, 5$ $y = 2, 3$	<p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>[5 m]</p>
2	<p>(a)</p> <div style="display: flex; align-items: center; justify-content: center;">  <div style="margin-left: 20px;"> <p>1m – graf sin x</p> <p>1m – graf sin $\frac{1}{2}x$</p> <p>1m – 2 unit ke bawah</p> <p>1m – nilai di paksi x , y</p> </div> </div> <p>(b) melakar graf $y = \frac{x}{2\pi} - 2 \dots\dots\dots 1m$ Bilangan penyelesaian = 2 $\dots\dots\dots 1m$</p>	<p>[6 m]</p>

3	<p>(a) $\frac{m+1}{2} = 4$ $m = 7$</p> <p>$\frac{n}{4} + 5 = 4$ $n = -4$</p> <p>(b) $g(x) = 4x - 20$</p> <p>$gf(x) = f\left(\frac{x+1}{2}\right)$ $= 4\left(\frac{x+1}{2}\right) - 20$ $= 2x - 18$</p>	<p>1 1</p> <p>1 1</p> <p>1</p> <p>1 1</p> <p>[7m]</p>
4	<p>(a) $\frac{\log_5 25}{\log_5 \sqrt{x}} = m$</p> <p>$\log_5 \sqrt{x} = \frac{2}{m}$</p> <p>$\log_5 \sqrt{xy} = \log_5 \sqrt{x} + \log_5 \sqrt{y}$ $= \frac{2}{m} + \frac{1}{2} \log_5 y$ $= \frac{2}{m} + \frac{1}{2p}$</p> <p>(b) $4^{3x+2} = 4^{\left(\frac{3(x+10)}{2}\right)}$ $3x+2 = \frac{3(x+10)}{2}$ $x = \frac{26}{3}$</p>	<p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>1, 1</p> <p>1</p> <p>1</p> <p>[8m]</p>

<p>5</p>	<p>(a) $\vec{PR} = 6\mathbf{a}$, $\vec{PQ} = 5\mathbf{b}$</p> <p>$\vec{RB} = \vec{RP} + \vec{PB}$ $= -6\mathbf{a} + 2\mathbf{b}$</p> <p>(b) $\vec{CA} = \vec{CR} + \vec{RA}$ $= \mathbf{a} + \frac{1}{4} \vec{RB}$ $= \mathbf{a} + \frac{1}{4} (-6\mathbf{a} + 2\mathbf{b})$ $= -\frac{1}{2} \mathbf{a} + \frac{1}{2} \mathbf{b}$</p> <p>(c) $\vec{AQ} = \vec{AB} + \vec{BQ}$ $= \frac{3}{4} \vec{RB} + 3\mathbf{b}$ $= \frac{3}{4} (-6\mathbf{a} + 2\mathbf{b}) + 3\mathbf{b}$ $= -\frac{9}{2} \mathbf{a} + \frac{9}{2} \mathbf{b}$</p>	<p>1 1</p> <p>1 1 1</p> <p>1 1</p> <p>1</p> <p>[8m]</p>
<p>6</p>	<p>(a) $m_t = dy/dx$ $= 2x$ $= 2(4)$ $= 8$ $Q(x , 0) , P(4 , 16)$</p> <p>$\frac{16 - 0}{4 - x} = 8$ $x = 2$ $Q(2 , 0)$</p> <p>(b) $Luas = \int_0^2 x^2 dx - \frac{1}{2}(2)(16)$</p> <p>$= [\frac{x^3}{3}]_0^2 - 16$</p> <p>$= 5\frac{1}{3} @ 5.333 \text{ unit}^2$</p>	<p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>[6m]</p>

9	$\frac{1}{x}$	0.67	0.5	0.4	0.33	0.29	0.25	1
	$\frac{1}{y}$	0.51	1.59	2.27	2.78	3.03	3.23	1
(b)								
Melukis paksi – X dan Y dengan skala yang betul								1
Memplotkan titik dengan betul								1
Melukiskan garis penyuaiian terbaik dengan betul								1
(c)								
$\frac{p}{y} = \frac{q}{x} + 8$ $\frac{1}{y} = \frac{q}{p} \left(\frac{1}{x} \right) + \frac{8}{p}$								1
$\frac{8}{p} = Y\text{-intercept}$								
$\frac{8}{p} = 4.9$								1
$p = 1.633$								1
$\frac{q}{p} = \text{Gradient of the graph}$ $= -6.68$								1
$q = -6.68 \times 1.633 = -10.91$								1
								[10m]

10	<p>(a) $m_{BC} = -\frac{k}{3}$, $m_{OA} = \frac{3}{2}$</p> $-\frac{k}{3} \times \frac{3}{2} = -1$ $k = 2$ <p>(b) $m_{DC} = \frac{16}{5}$, $m_{OA} = \frac{3}{2}$</p> $m_{DC} \neq m_{OA} \Rightarrow \text{DC dan OA tidak selari}$ <p>(c) B(0 , 5/3) , m = 3/2</p> $y - \frac{5}{3} = \frac{3}{2} (x - 0)$ $y = \frac{3}{2}x + \frac{5}{3}$ <p>(d) D(5 , 8) , P(x,y)</p> $\text{DP} = 5$ $\sqrt{(x - 5)^2 + (y - 8)^2} = 5$ $x^2 + y^2 - 10x - 16y + 64 = 0$	<p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>1,1</p> <p>1</p> <p>[10m]</p>
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(a) i. $PS = \frac{8}{\sin 60^\circ} \times \sin 80^\circ$

$$= 9.097 \text{ cm}$$

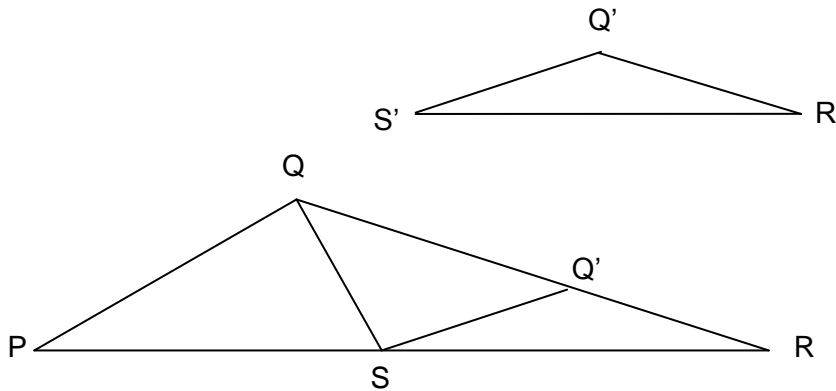
$$SR = \frac{1}{2}PS = 4.549 \text{ cm}$$

ii. $\angle QPS = 40^\circ$
 $PR = 13.65 \text{ cm}$

$$QR^2 = 8^2 + 13.65^2 - 2(8)(13.65) \cos 40^\circ$$

$$QR = 9.111 \text{ cm}$$

(b) i.



(ii)

$$\cos \angle PRQ = \frac{8^2 - 13.65^2 - 9.111^2}{-2(13.65)(9.111)}$$

$$\angle PRQ = 34.36^\circ$$

$$\angle QPR = 40^\circ$$

$$\angle PQR = 145.64^\circ$$

$$\angle SQR = 25.64^\circ = \angle SQ'Q$$

$$\angle S'Q'R' = 180^\circ - 25.64^\circ = 154.36^\circ$$

iii) Area of $\Delta Q'R'S' = \frac{1}{2}(4.549)(9.111) \sin 34.36^\circ$
 $= 11.70 \text{ cm}^2$

1

1

1

1

1

1

1

1

1

1

[10 m]

