



KEMENTERIAN PENDIDIKAN
JABATAN PENDIDIKAN NEGERI PERAK



MODUL BLUE DIAMOND *Matematik Tambahan*

TINGKATAN 4

Bab 7

GEOMETRI KOORDINAT *(Coordinate Geometry)*

SKEMA JAWAPAN

SKEMA JAWAPAN KERTAS 1

NO.	BUTIRAN	PECAHAN MARKAH	JUMLAH
1	(a) $\frac{x-x_1}{x_2-x_1} = \frac{m}{n}$ atau $\frac{y-y_1}{y_2-y_1} = \frac{m}{n}$ $x(m+n) = nx_1 + mx_2$ atau $y(m+n) = ny_1 + my_2$ $x = \frac{nx_1+mx_2}{m+n}$ $y = \frac{ny_1+my_2}{m+n}$	1 1 1 1	8
	(b) $\frac{4(4)+3(h)}{4+3} = 0$ atau $\frac{4(k)+3(1)}{4+3} = -2$ $16+3h=0$ atau $4k+3=-14$ $h = -\frac{16}{3}$ $k = -\frac{17}{4}$	1 1 1 1	

Sumber : Ticket To Victory 1 | Kertas 1 | Set 1 | Soalan 15

NO.	BUTIRAN	PECAHAN MARKAH	JUMLAH
2	(a) $\sqrt{(x-(-2))^2+(y-1)^2}$ @ $\sqrt{(x-4)^2+(y-3)^2}$ $\sqrt{(x-(-2))^2+(y-1)^2} = 2\sqrt{(x-4)^2+(y-3)^2}$ $3x^2+3y^2-36x-22y+95=0$	1 1 1	6
	(b) $3x^2+3(0)^2-36x-22(0)+95=0$ atau $3x^2-36x+95=0$ $b^2-4ac = (-36)^2-4(3)(95) = 156 > 0$ Pagar tidak dapat dibina dengan sempurna kerana menyentuh sungai pada dua tempat yang berbeza.	1 1 1	

Sumber : Ticket To Victory 1 | Kertas 1 | Set 2 | Soalan 7

NO.	BUTIRAN	PECAHAN MARKAH	JUMLAH
3	(a) $4 = -\frac{1}{3}(-1) + c$ atau $c = \frac{11}{3}$ atau $m_{PR} = -\frac{1}{3}$ $y = -\frac{1}{3}x + \frac{11}{3}$ $3x-8 = -\frac{1}{3}x + \frac{11}{3}$ $R(\frac{7}{2}, \frac{5}{2})$	1 1 1 1	6
	(b) $\frac{1}{2} \left \left(-7 + \frac{25}{2} + 14 \right) - \left(-\frac{5}{2} + \frac{49}{2} + 20 \right) \right $ $\frac{45}{4}$	1 1	

Sumber : Ticket To Victory 1 | Kertas 1 | Set 3 | Soalan 7

NO.	BUTIRAN		PECAHAN MARKAH	JUMLAH
4	(a)	$x^2 + (2x)^2 = 80$ $x = 4$ $A(4,8)$	1 1 1	6
	(b)	$2 \times m_{AB} = -1 \quad \text{atau} \quad m_{AB} = -\frac{1}{2}$ $8 = -\frac{1}{2}(4) + c$ $y = -\frac{1}{2}x + 10$	1 1 1	

Sumber : Ticket To Victory 2 | Kertas 1 | Set 2 | Soalan 1

NO.	BUTIRAN		PECAHAN MARKAH	JUMLAH
5	(a)	$\frac{1}{2} (5)(3) + 1(2) + (-3)(-2) + (-2)(-4) + (4)(1) - (1)(1) - (3)(-3) - (2)(-2) - (-2)(4) - (-4)(5) $ $\frac{1}{2} 75 $ $37.5 \text{ unit}^2 \quad \text{atau} \quad 375000\text{m}^2$ 0.375km^2	1 1 1 1	8
	(b)	$\frac{y-3}{x-1} \text{ atau } \frac{y-1}{x-5}$ $\frac{y-3}{x-1} \times \frac{y-1}{x-5} = -1$ $\frac{y^2 - 4y + 3}{x^2 - 6x + 5} = -1$ $y^2 + x^2 - 4y - 6x + 8 = 0$	1 1 1 1	

Sumber : Ticket To Victory 2 | Kertas 1 | Set 2 | Soalan 14

NO.	BUTIRAN		PECAHAN MARKAH	JUMLAH
6	(a)	Katakan $P(x, y)$ ialah titik pada rel yang baru. C : Chow Kit A : Ampang Park $PC = PA$ $\sqrt{[x - (-1.5)]^2 + (y - 2.5)^2} = \sqrt{(x - 2)^2 + (y - 4)^2}$ $x^2 + 3x + 2.25 + y^2 - 5y + 6.25 = x^2 - 4x + 4 + y^2 - 8y + 16$ $7x + 3y - 11.5 = 0$	1,1 1 1	6

	(b)	Batu Cave $(-4, 12)$ $7(-4) + 3y - 11.5 = 0$ Dang Wangi $y = \frac{79}{6} \neq 12$ $(2.5, -2)$ $7(2.5) + 3y - 11.5 = 0$ $y = -2$ Dang Wangi kerana koordinat berada di atas lokus.	Ganti kedua-dua koordinat 1	
			1	

Sumber : Modul Gempur | Kertas 1 | Set 1 | Soalan 3

NO.	BUTIRAN		PECAHAN MARKAH	JUMLAH
7	(a)	$m = 1 \text{ dan } n = 1$	1	8
	(b)	$\left(\frac{2k+7k}{2}, \frac{4k+k}{2} \right)$ atau $\left(\frac{(2k)(1)+(7k)(1)}{1+1}, \frac{(4k)(1)+(k)(1)}{1+1} \right)$ $h+k = \frac{4k+k}{2}$ $h = \frac{3}{2}k$	1	
			1	
	(c)	$h = 3 \text{ atau } k = 2$ $\frac{1}{2} \left [(4)(2) + (14)(L-2) + (8)(2) + (0)(8)] \right = 105$ $14L - 140 = \pm 210$ $L = 25, L = -5$ $S(8, -7)$	1	
			1	
			1	
			1	

Sumber : Modul Gempur | Kertas 1 | Set 2 | Soalan 13

SKEMA JAWAPAN KERTAS 2

NO.	BUTIRAN		PECAHAN MARKAH	JUMLAH
1	(a)	(i) $t = 3$	1	8
		(ii) Solve $\frac{3}{2}x - 13 = -\frac{2}{3}x$ $P = (6, -4)$	1 1	
	(b)	(i) $E(\frac{26}{3}, 0)$ [Implied]	1	
		$\frac{26}{3} = \frac{2x+6}{3}$ OR $0 = \frac{2y-4}{3}$	1	
		$Q(10, 2)$	1	
		(ii) $y - 2 = -\frac{2}{3}(x - 10)$ $3y = -2x + 26$	1 1	

Sumber : Ticket To Victory 1 | Kertas 2 | Set 1 | Soalan 3

NO.	BUTIRAN		PECAHAN MARKAH	JUMLAH
2	(a)	Solve simultaneously $y = -8x - 24$ and $7y = -4x + 40$ $-8x - 24 = -\frac{4}{7}x + \frac{40}{7}$ $C(-4, 8)$	1 1	10
		(b) (i) $\frac{3(3)+2x}{3+2} = -3$ or $\frac{3(4)+2y}{3+2} = 0$ $D(-12, -6)$	1 1	
	(ii)	$\frac{1}{2} \left \begin{array}{l} [(3)(8) + (-4)(-6) + (4)(-12)] - \\ [(4)(-4) + (8)(-12) + (3)(-6)] \end{array} \right $	1	
		$\triangle \quad \triangle \quad 5:65$ $2:5$	1 1	
	(c)	$\frac{y-(-6)}{x-(-12)}$ or $\frac{y-8}{x-(-4)}$	1	
		$\frac{y-(-6)}{x-(-12)} \times \frac{y-8}{x-(-4)} = -1$	1	
		$x^2 + y^2 + 16x - 2y = 0$	1	

Sumber : Ticket To Victory 1 | Kertas 2 | Set 1 | Soalan 8

NO.	BUTIRAN		PECAHAN MARKAH	JUMLAH
3	(a)	$\sqrt{(-p-0)^2 + (p-0)^2} = \frac{\sqrt{72}}{2}$	1	7
		$p = 3$	1	
	(b)	(i)	Cari persamaan Garis Lurus ML	
		$y - 3 = 1(x + 3)$	1	
		Selesaikan persamaan Garis Lurus ML dan Garis Lurus KL secara serentak	1	
		$(x + 6) + x = 8$	1	
		$L(1, 7)$		
	(ii)	Cari persamaan Garis Lurus KN	1	
		$y - 4 = 7(x - 4)$		
		$y = 7x - 24$	1	

Sumber : Ticket To Victory 1 | Kertas 2 | Set 2 | Soalan 3

NO.	BUTIRAN		PECAHAN MARKAH	JUMLAH
4	(a)	$= \sqrt{(0-9)^2 + (8-0)^2}$	1	8
		$= \sqrt{145}$		
		$= 12.042 \text{ unit}$	1	
		$= 12.042 \times 100 \text{ m}$		
		$= 1204.2 \text{ m}$	1	
		$= 1.242 \text{ km}$		
	(b)	Luas = $\frac{1}{2} \begin{vmatrix} 0 & 8 & 12 & 0 \\ 9 & 0 & 12 & 9 \end{vmatrix}$		
		$= \frac{1}{2} (0 + (8)(12) + (12)(9)) - ((7)(8) + 0 + 0) $	1	
		$= \frac{1}{2} 132 $		
		$= 66 \text{ unit}^2$	1	
		1 unit = 100 m (0.1 km)		
		1 unit ² = 0.01 km ²		
		66 unit ² = 0.66km ²		
		Maka luas yang dicakupi tiga stesen itu ialah 0.66 km ²	1	

(c)	Katakan koordinat titik P ialah (x , y) Jarak P dari B = 5 $\sqrt{(x-8)^2 + (y-0)^2} = 5$ $(x-8)^2 + (y-0)^2 = 25$ $x^2 + y^2 - 16x + 39 = 0$	1	
		1	

Sumber : Ticket To Victory 2 | Kertas 2 | Set 1 | Soalan 6

NO.	BUTIRAN		PECAHAN MARKAH	JUMLAH
5	(a)i	$C\left(\frac{21}{2}, 2\right)$	1	10
	(a)ii	B (0, -5) $\frac{2(x)+7(-3)}{9} = 0 \text{ atau } \frac{2k+7(-7)}{9} = -5$	1	
			1	
	(b)	$\frac{2}{3} \times m_N = -1$ $y - (-7) = -\frac{3}{2}(x - (-3)) \quad 2y = -3x - 23 \text{ atau setara}$	1	
			1	
	(c)	Luas segitiga AOB= $\frac{1}{2} \left[\begin{aligned} &((-3 \times 0) + (0 \times -5) + (0 \times -7)) \\ &-((-7 \times 0) + (0 \times 0) + (-5 \times -3)) \end{aligned} \right]$ atau Luas segitiga AOC= $\frac{1}{2} \left[\begin{aligned} &\left((-3 \times 0) + (0 \times 2) + \left(\frac{21}{2} \times -7\right)\right) \\ &-((-7 \times 0) + \left(0 \times \frac{21}{2}\right) + (2 \times -3)) \end{aligned} \right] \text{ Luas segitiga AOB} = \frac{15}{2}$ atau Luas segitiga AOC= $\frac{135}{24}$ $\frac{15}{2} : \frac{135}{24}$ $4 : 3$	1	
			1	
			1	

Sumber : Modul Gempur | Kertas 2 | Set 1 | Soalan 11