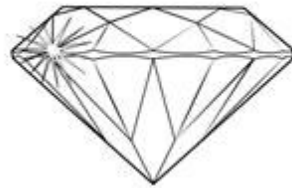




KEMENTERIAN PENDIDIKAN
JABATAN PENDIDIKAN NEGERI PERAK



MODUL BLUE DIAMOND *Matematik Tambahan*

TINGKATAN 5

Bab 1

SUKATAN MEMBULAT *(Circular Measure)*

SKEMA JAWAPAN

JABATAN PENDIDIKAN NEGERI PERAK
We Deliver

Sumber Soalan :

Ticket To Victory I (Set 1)
Ticket To Victory I (Set 2)
Ticket To Victory I (Set 3)
Ticket To Victory II (Set 1)
Ticket To Victory II (Set 2)
Modul Gempur Matematik Tambahan (Set 1)
Modul Gempur Matematik Tambahan (Set 2)

Disusun Oleh :

NORANITA BT MOHD SAID (GC)
SMK Bukit Jana

ROHAYA BINTI MORAT (GC)
SM Sains Telok Intan

CHAI PEI YIN (GC)
SMK Malim Nawar

NOORUL HUDA MOHD HASHIM (GC)
SMK Taman Tasik

NOR ASRINA HABIBUL RAHMAN
SMK Sultan Idris Shah II

DESIKAN A/L SUBRAMANIAM
SMK Ayer Tawar

ZAINAB BINTI ABD RAHMAN
SMK Convent Taiping



SKEMA JAWAPAN KERTAS 1

NO.	BUTIRAN		PECAHAN MARKAH	JUMLAH
1	(a)	$9 + r + r = 19$ $r = 5$ $\theta = 1.8 \text{ rad}$ $= 103.12^\circ$	1 1 1 1	7
	(b)	$\pi - 1.8 = 1.342$ $S = 5(1.342)$ Perimeter $QOR = 5 + 5 + 6.71$ $= 16.71 \text{ cm}$	1 1 1	

Sumber : Ticket To Victory 1 | Kertas 1 | Set 1 | Soalan 4

NO.	BUTIRAN		PECAHAN MARKAH	JUMLAH
2	(a)	$\cos \theta = \frac{2}{12} \text{ or } \theta = 80.41$ $\theta = 1.404$ length of arc $= 7(1.404)$ 9.828	1 1 1 1	8
	(b)	$\angle DRA = 1.7384 \text{ or } DI = 11.8322 \text{ or } DI = \sqrt{(12)^2 - (2)^2}$ $\text{Area Trapezium} = \frac{1}{2} \times (5 + 7) \times (11.8322)$ OR $\text{Area Sector } AZI = \frac{1}{2} \times (7)^2 \times (1.404)$ OR $\text{Area Sector } DRA = \frac{1}{2} \times (5)^2 \times (1.7384)$ $70.9932 - 34.398 - 21.73$ 14.87	1 1 1 1	

Sumber : Ticket To Victory 1 | Kertas 1 | Set 2 | Soalan 13

NO.	BUTIRAN		PECAHAN MARKAH	JUMLAH
3	$\tan \theta = \frac{20}{10} \text{ or } 63.43^\circ \text{ or } 1.1072$		1	4
	$\frac{1}{2}(10)^2(2.0348) \text{ or } \frac{1}{2}(10)^2(1.1072) \text{ or } \frac{1}{2}(10)(20)$		1	
	$101.74 + (100 - 55.36)$		1	
	57.1		1	

Sumber : Ticket To Victory 1 | Kertas 1 | Set 3 | Soalan 10

NO.	BUTIRAN	PECAHAN MARKAH	JUMLAH
4	$3 \left[\frac{1}{2} \left(\frac{2}{3} r \right)^2 \theta \right] = \frac{1}{2} r^2 \alpha$ $\alpha = \frac{4}{3} \theta$ $\text{Perimeter} = \left(\frac{2}{3} r \right) \theta + r \left(\frac{4}{3} \theta \right) + \frac{2}{3} r + \frac{1}{3} r + r$ $\text{Perimeter} = 2r\theta + 2r$	1 1 , 1 1	4

Sumber : Ticket To Victory 2 | Kertas 1 | Set 1 | Soalan 11

NO.	BUTIRAN	PECAHAN MARKAH	JUMLAH
5	$\frac{1}{2} \times (3.142) (9)^2$ $\frac{1}{2} \times (9)^2 \times (0.8)$ $\frac{1}{2} \times (3.142) (9)^2 - \frac{1}{2} \times (9)^2 \times (0.8)$ 104.851	1 1 1 1	4

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

NO.	BUTIRAN	PECAHAN MARKAH	JUMLAH
6	(a) $9.24 = 7.34 \times \theta$ $\theta = 1.2589 \text{ radian}$ $\theta = 1.2589 \times \frac{180}{3.142}$ $\theta = 72.12^\circ$	1 1	4
	(b) Perentas PQ/Chord PQ $PQ^2 = (7.34)^2 + (7.34)^2 - 2(7.34)(7.34) \cos 72.12^\circ$ $\text{Perimeter} = 8.6411 + 9.24$ $= 17.88 \text{ cm}$	1 1	

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

NO.	BUTIRAN	PECAHAN MARKAH	JUMLAH
7	$\angle AOB = \frac{60^0}{180^0} \times \pi$ $= \frac{\pi}{3} rad$ Luas /Area of shaded region $= 3 \times \frac{1}{2} \left(\frac{r}{3} \right)^2 \left(\frac{\pi}{3} - \sin 60^0 \right)$ $= \frac{r^2}{6} \left(\frac{\pi}{3} - \frac{\sqrt{3}}{2} \right)$ $= \left(\frac{\pi}{18} - \frac{\sqrt{3}}{12} \right) r^2 cm^2$ When $r=30cm$, $Area = \left(\frac{\pi}{18} - \frac{\sqrt{3}}{12} \right) (30)^2 cm^2$ $= 27.196/ 27.20 cm^2$	1 1 1 1 1 1	6

Sumber : Modul Gempur | Kertas 1 | Set 2 | Soalan 9

SKEMA JAWAPAN KERTAS 2

NO.	BUTIRAN	PECAHAN MARKAH	JUMLAH
1	(a) $\cos \angle ABD = \frac{3}{6}$ $\theta = 2.0944$ radian	1 1	
	(b) $AB = 6$ cm $6(2.0944)$ $6(2.0944) + 6(2.0944) + 3(6)$ 43.14 cm	1 1 1 1	
	(c) $\frac{1}{2} (6)^2 (3.142)$ or $\frac{1}{2} (6)^2 (60 \times \frac{\pi}{180})$ $\frac{1}{2} (6)^2 \sin 60^\circ$ $\frac{1}{2} (6)^2 (3.142) - \frac{1}{2} (6)^2 (60 \times \frac{\pi}{180}) -$ $\left[\frac{1}{2} (6)^2 (60 \times \frac{\pi}{180}) - \frac{1}{2} (6)^2 \sin 60^\circ \right]$ 34.43 cm	1 1 1 1	

Sumber : Ticket To Victory 1 | Kertas 2 | Set 1 | Soalan 11

NO.	BUTIRAN		PECAHAN MARKAH	JUMLAH
2	(a)	$\tan \angle XOZ = \frac{18}{10}$	1	10
		$\angle XOY = 2.128 \text{ rad}$	1	
	(b)	$10(6.284 - 2.128)$	1	
		$18 + 18 + 10(6.284 - 2.128)$	1	
		77.56 m	1	
	(c)	$\frac{1}{2} \times 18 \times 10$	1	
		$\frac{1}{2} \times 10^2 \times 2.128$	1	
		$2\left[\frac{1}{2} \times 18 \times 10\right] - \frac{1}{2} \times 10^2 \times 2.128$	1	
		73.60 × RM 25	1	
		RM 1840	1	

Sumber : Ticket To Victory 1 | Kertas 2 | Set 2 | Soalan 11

NO.	BUTIRAN		PECAHAN MARKAH	JUMLAH
3	(a)	$5(3.6) = 2OR$	1	10
		$PQ = 7.2$	1	
	(b)	$\sqrt{3.6^2 - 1.8^2} = 3.12$	1, 1	
		$(9 - 3.6) + 3.12 + 7.2 + 9\left(\frac{\pi}{3}\right)$	1	
		525.14	1	
	(c)	$\frac{1}{2}(9)^2\left(\frac{\pi}{3}\right) - \frac{1}{2}(1.8)(3.12)$	1, 1, 1	
		39.6	1	

Sumber : Ticket To Victory 1 | Kertas 2 | Set 3 | Soalan 11

NO.	BUTIRAN		PECAHAN MARKAH	JUMLAH
4	(a)	$\tan \angle OAC = \frac{4}{8} \angle OAC = 26.57^\circ$	1	10
		$\angle AOC = 126.86^\circ$ atau 126.87°	1	
		2.214 rad atau 2.215 rad	1	
	(b)	Panjang lengkok ABC = 8(4.070) atau 8(4.069)	1	
		4.070 rad atau 4.069 rad	1	
		32.56 cm atau 32.55 cm	1	

(c)	$\text{Luas sektor OABC} = \frac{1}{2}(8)^2(2.214) \text{ atau } \frac{1}{2}(8)^2(2.215)$ $\text{Luas } \triangle OAC = \frac{1}{2}(8)^2 \sin 126.86^\circ$ Luas Kawasan berllorek $= \frac{1}{2}(8)^2(2.214) - \frac{1}{2}(8)^2 \sin 126.86^\circ$ $= 45.25 \text{ cm}^2 \text{ atau } 45.28 \text{ cm}^2$	1 1 1 1	

Sumber : Ticket To Victory 2 | Kertas 2 | Set 1 | Soalan 11

NO.	BUTIRAN		PECAHAN MARKAH	JUMLAH
5	(a)	$(OR)(0.9273) = 13.91$	1	8
		$OR = 15 \text{ cm}$	1	
	(b)	$OP = 9 \text{ cm}$	1	
		$PR = 6 \text{ cm}$	1	
		$RQ = 15 \sin 0.9273 \text{ rad} \text{ atau } \sqrt{15^2 - 9^2}$	1	
		$9(0.9273)$	1	
		$= 9(0.9273) + 6 + 15 \sin 0.9273 \text{ rad}$	1	
		$= 26.35 \text{ cm}$		

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

NO.	BUTIRAN		PECAHAN MARKAH	JUMLAH
6	(a)	$4jp = j\theta$ $\theta = 4p$	1 1	8
	(b)	$s = \left(\frac{3}{2}j\right)(8p)$ $s = 12jp$	1 1	
	(c)	$p = \frac{\pi}{6}$ $\frac{1}{2}(j^2)(4p) + \frac{1}{2}\left(\frac{3}{2}j\right)^2(8p)$ $\frac{11}{6}j^2\pi$	1 1, 1 1	

Sumber : Modul Gempur | Kertas 2 | Set 1 | Soalan 7

NO.	BUTIRAN		PECAHAN MARKAH	JUMLAH
7	(a)	$\angle HOK = \frac{15}{12}$ 0.625 rad	1 1	10
	(b)	1.892 rad 12(1.892) atau 2(12) sin 1.892 12(1.892) + 2(12) sin 1.892 42.17 m $\frac{1}{2}(12)^2(1.25)$ $\frac{1}{2}(24)(17.32)$ atau $\frac{1}{2}(12)^2 \sin 108.39^\circ$ $\frac{1}{2}(24)(17.32) - \frac{1}{2}(12)^2(1.25) - \frac{1}{2}(12)^2 \sin 108.39^\circ$ 49.52 m ²	1 1 1 1 1 1 1 1	

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