

SULIT

3472/1

Matematik Tambahan

2025



MAJLIS PENGETUA SEKOLAH MENENGAH MALAYSIA
CAWANGAN NEGERI SEMBILAN DARUL KHUSUS

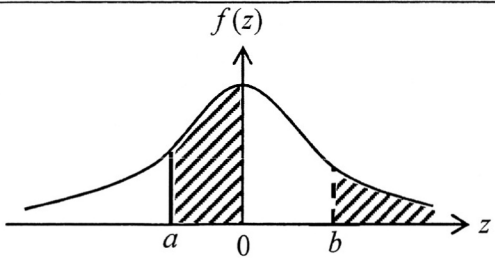
**PROGRAM PENINGKATAN AKADEMIK TINGKATAN 5
SEKOLAH-SEKOLAH MENENGAH NEGERI SEMBILAN 2025**

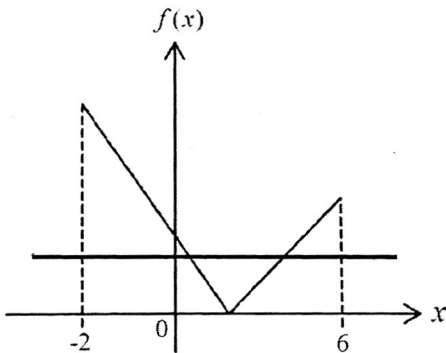
**PERATURAN PERMARKAHAN
MATEMATIK TAMBAHAN KERTAS 1**

Soalan		Skema Pemarkahan	Markah
1	(a)	$Y = \frac{y}{x}$	N1
	(b)	$\frac{1}{5} = p(2) + q$	K1
		$q = \frac{1}{5} - 2p$	N1
			3
2	(a)	$fg(x) = 2 - (qx^2 + r)$	K1
		$-q = 3 @ 2 - r = -8$	K1
		$q = -3 \text{ dan } r = 10$	N1
	(b)	$g^2(0) = g(-3(0)^2 + 10)$	K1
		$= -290$	N1
			5
3	(a)	$10^m @ (a^2b)^m$	K1
		$a^2b = 10$	K1
		$a = \pm \sqrt{\frac{10}{b}}$	N1
	(b)	$\frac{\log_2 2x}{\log_2 16} \text{ atau } \frac{\log_2 2x}{\log_2 2^4} + \log_2 x = -1$	K1
		$\log_2 (2x)^{\frac{1}{4}} + \log_2 x = -1$	
		$\log_2 (2x)^{\frac{1}{4}}(x) @ 2^{\frac{1}{4}}x^{\frac{5}{4}} @ 2^{-1}$	K1
		$x^{\frac{5}{4}} = 2^{-\frac{5}{4}} \text{ atau } x^{\frac{5}{4}} = \left(\frac{1}{2}\right)^{\frac{5}{4}}$	
		$x = \frac{1}{2}$	N1
			6

Soalan		Skema Pemarkahan	Markah
4	(a)	$\begin{pmatrix} 3 \\ -2 \end{pmatrix} + \begin{pmatrix} 12 \\ 7 \end{pmatrix}$	K1
		$\begin{pmatrix} 15 \\ 5 \end{pmatrix}$	N1
	(b)	$\begin{pmatrix} 3 \\ -2 \end{pmatrix} + \overrightarrow{OR} = \frac{3}{5} \begin{pmatrix} 15 \\ 5 \end{pmatrix}$	K1
		$\sqrt{6^2 + 5^2}$	K1
		$\sqrt{61}$ atau 7.810	N1
			5
5	(a)	$m_{BD} = \frac{1}{2}$ dan $\frac{1}{2}m = -1$	K1
		$y - 1 = -2(x - 5)$	K1
		$y = -2x + 11$	N1
	(b)	$\frac{2n + 5m}{m + n} = 4$	K1
		$m : n = 2 : 1$	N1
			5
6	(a)	$r(0.52) = 5.98$	K1
		11.5	N1
	(b)	$\frac{1}{2}(*11.5)^2(0.52) - \frac{1}{2}(6)^2(0.52)$	K1
		25.025	N1
			4
7	(a)	Janjang geometri // Jujukan geometri & $r_1 = r_2 = x$	P1
	(b)	$a \times 1.085 = 32550$ atau $a = 30000$	K1
		$\frac{30000(1.085^6 - 1)}{1.085 - 1} - \frac{30000(1.085^3 - 1)}{1.085 - 1}$	K1
		$125004 \times 30\%$	K1
		37501	N1
			5



Soalan		Skema Pemarkahan	Markah
8	(a)	$(\tan x + 3)(\tan x - 1) = 0$	K1
		<i>sudut rujukan</i> = 45° dan 71.57°	K1
		45° dan 108.43°	N1
	(b)(i)	$\sqrt{1-p^2}$	N1
	(ii)	$2 \sin \frac{\theta}{2} \cos \frac{\theta}{2}$	K1
		$2p\sqrt{1-p^2}$	N1
			6
9	(a)	(i) -2	P1
		(ii) 1	P1
	(b)	(i) $3(1)^2 - p(1) + 3 = 0$	K1
		6	N1
		(ii) $\frac{d^2y}{dx^2} = 6(1) - 6$	K1
		$\frac{d^2y}{dx^2} = 0$ dan L ialah titik lengkok balas	N1
			6
10	(a)(i)	$\mu = 0, \sigma^2 = 1$	N1
	(ii)		N1
	(iii)	1	N1
	(b)(i)	3	K1
	(ii)	$P(X=0) = P(X=3)$ atau ${}^3C_0 p^0 q^3 = {}^3C_3 p^3 q^0$	K1
		$(1-p)^3 = p^3$	K1
		$p = \frac{1}{2}$	N1
			7

Soalan		Skema Pemarkahan	Markah
11	(a)	$ 2(-2) - 5 $	K1
		$0 \leq f(x) \leq 9$	N1
	(b)	$2x - 5 > 9$, $2x - 5 < -9$	K1
		$x > 7$, $x < -2$	N1
	(c)		N1
		Tidak mempunyai fungsi songsang kerana ujian garis mengufuk sentuh graf pada dua titik.	N1
			6
12	(a)(i)	${}^3P_1 \times {}^4P_3 @ 3 \times 4 \times 3 \times 2$	K1
		72	N1
	(ii)	24	N1
	(b)	${}^4C_3 \times {}^5C_1 @ {}^4C_4 \times {}^5C_0$	K1
		${}^4C_3 \times {}^5C_1 + {}^4C_4 \times {}^5C_0$	K1
		21	N1
			6
13	(a)	$x = \frac{\sqrt{3} - \sqrt{7}}{\sqrt{m}} \times \frac{\sqrt{m}}{\sqrt{m}}$	K1
		$x = \frac{\sqrt{3m} - \sqrt{7m}}{m}$	N1
	(b)	$\log_a m^n = nx$	K1
		$\log_a m^n = n \log_a m$	N1

13	(c)		$(3 \times 2^{\frac{k-1}{2}})^2 = (2^{\frac{k-1}{2}})^2 + 1^2$	K1
			$9 \times 2^{k-2} @ 2^{k-2}$	K1
			$2^{k-2} = 2^{-3} @ 2^k = 2^{-1}$	K1
			$k = -1$	N1
				8
14	(a)	(i)	$a < 0$	P1
		(ii)	$b^2 - 4ac < 0$	P1
	(b)	(i)	$f(x) = a(x-5)^2 + 6$ atau setara	K1
			$0 = a(0-5)^2 + 6$ atau setara	K1
			$f(x) = -\frac{6}{25}(x-5)^2 + 6$ atau setara	N1
		(ii)	$4.3 = -\frac{6}{25}(x-5)^2 + 6$ atau setara	K1
			$x = 7.661, 2.339$ (dan penyelesaiannya)	K1
			Reka bentuk pintu gerbang tersebut dapat dilalui dua buah kenderaan dengan serentak kerana $7.661 - 2.339 > 2.1 \times 2$.	N1
				8
15	(a)		Vektor paduan bahagian (a) atau di bahagian (c) $700\hat{i} - 100\hat{j} + a\hat{i} + b\hat{j} @ (-700\hat{i} - 100\hat{j}) + (20\hat{i} + 100\hat{j})$	P1
			$-100 + b = 0$	K1
			$b = 100$	N1
	(b)		$900\hat{i} = (700 + a)\hat{i} \times 1.25$ (sesaran=halajuxmasa)	K1
			$a = 20$	N1
	(c)		$\frac{900}{680}$	K1
			1.324 jam	N1
	(d)		$\sqrt{700^2 + 100^2} = 707.11$	N1
				8