

MODUL PINTAS 2024
TINGKATAN 5
MATEMATIK TAMBAHAN
Kertas 1

3472/1

2 jam

Dua jam

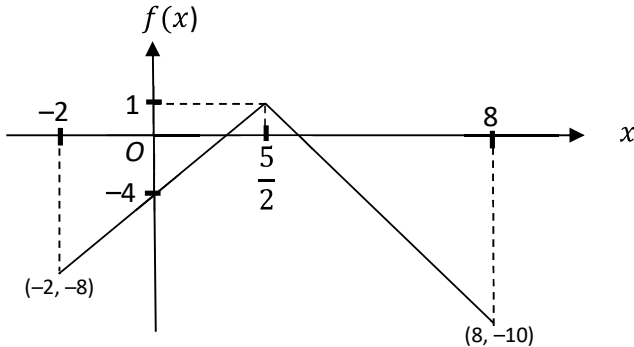
PERATURAN PEMARKAHAN
MATEMATIK TAMBAHAN K1
3472/1



NO SOALAN		JAWAPAN	MARKAH	
BAHAGIAN A				
1	a	$\frac{6.4}{8}$ 0.8	K1 N1	
	b	$PR^2 = 8^2 + 8^2 - 2(8)(8) \cos 45.83^\circ$ @ setara 6.23	K1 N1	
			4	
2	$\log_{10} y = 2x - 3$ $2 = \frac{2-(-3)}{q-0}$ @ $2 = 2q - 3$ $p = -3, q = \frac{5}{2}$		P1 K1 N1, N1	
			4	
3	a	$r_1 = \frac{p^{12}}{p^8}$ dan $r_2 = \frac{p^{16}}{p^{12}}$ dan $r_3 = \frac{p^{20}}{p^{16}}$ $r_1 = r_2 = r_3 = p^4$, jujukan ini ialah panjang geometri kerana nisbah sepunya, r adalah sama.	K1 N1	
	b	$S_n = a + ar + ar^2 + \dots + ar^{n-1} \dots (1)$ @ $rS_n = ar + ar^2 + ar^3 + \dots + ar^n \dots (2)$ (2) - (1) $rS_n - S_n = (ar + ar^2 + ar^3 + \dots + ar^n) - (a + ar + ar^2 + \dots + ar^{n-1})$ $S_n (r - 1) = a (r^n - 1)$ $S_n = \frac{a(r^n - 1)}{r - 1}$	K1 K1 N1	
				5

NO SOALAN		JAWAPAN	MARKAH
4	a	$\frac{dA}{dr} = 2\pi r$ @ $\frac{dA}{dt} = 2\pi(2) \times 3$ 12π	K1 N1
	b	$k'(x) = 3mx^2 - 4x + 6$ @ $k''(x) = 6mx - 4$ $6m(2) - 4 = 3m(1)^2 - 4(1) + 6$ $m = \frac{2}{3}$	K1 K1 N1
			5
5	a	$t = \frac{150}{x}$ @ $x + 10 = \frac{150}{t - \frac{20}{60}}$ @ setara $\frac{150}{x+10} = \frac{150}{x} - \frac{20}{60}$ $x^2 + 10x - 4500 = 0$ $\frac{-10 \pm \sqrt{10^2 - 4(1)(-4500)}}{2(1)}$ 62.27	P1 K1 K1 N1
	b	$\alpha + \beta = -\frac{-6}{2}$ dan $\alpha\beta = \frac{9}{2}$ $\alpha + 2 + \beta + 2 = 7$ @ $(\alpha + 2)(\beta + 2) = \frac{29}{2}$ $2x^2 - 14x + 29 = 0$	P1 K1 N1
			7
6	a	Kuantiti skalar kerana ketumpatan mempunyai nilai magnitud sahaja. <i>Scalar quantity because density only has magnitude value.</i>	P1
	b	i $\vec{AC} = \vec{AO} + \vec{OC}$ $\vec{OC} = 5\vec{p} + 10\vec{q}$	P1 N1
		ii $\vec{OC} = \frac{3}{n}\vec{p} + \frac{4}{n}\vec{q}$	N1
	iii	$3 = 5n$ @ $4 = 10mn$ $4 = 10m\left(\frac{3}{5}\right)$ $n = \frac{3}{5}$ dan $m = \frac{2}{3}$	K1 K1 N1
			7

NO SOALAN		JAWAPAN	MARKAH
7		1.047 rad	P1
		$\frac{1}{2} \times 12^2 \times *1.047 @ \frac{1}{2} \times 12^2 \times \sin *60^\circ$	K1
		$3[(\frac{1}{2} \times 12^2 \times *1.047) - (\frac{1}{2} \times 12^2 \times \sin *60^\circ)] @ \text{ setara}$	K1
		39.09 (39.09 - 39.18) terima jawapan dalam julat ini	N1
			4
8	a	$(x, y) = (\frac{2+4}{2}, \frac{6+2}{2})$ $\frac{1-*4}{1-*3}$ $y - 1 = \frac{3}{2}(x - 1) @ y -*4 = \frac{3}{2}(x -*3)$ $y = \frac{3}{2}x - \frac{1}{2} @ \text{ setara}$	P1 K1 K1 N1
	b	$\frac{1}{2} [(1)(2) + (4)(6) + (2)(1)] - [(4)(1) + (2)(2) + (1)(6)] $ 7	K1 N1
	c	$\sqrt{(x-1)^2 + (y-1)^2} = \sqrt{(x-4)^2 + (y-2)^2}$ $3x + y - 9 = 0$	P1 N1
			8
9	a	$\frac{6! \times 1}{2! \times 2! \times 2!} @ \frac{6P_6 \times 1P_1}{2! \times 2! \times 2!}$ 90	K1 N1
	b i	${}^3C_1 \times {}^3C_1 \times {}^4C_1$ 36	K1 N1
	ii	${}^3C_2 \times {}^3C_1 \times {}^4C_1 @ {}^3C_1 \times {}^3C_2 \times {}^4C_1 @ {}^3C_1 \times {}^3C_1 \times {}^4C_2$ $({}^3C_2 \times {}^3C_1 \times {}^4C_1) + ({}^3C_1 \times {}^3C_2 \times {}^4C_1) + ({}^3C_1 \times {}^3C_1 \times {}^4C_2)$ 126	K1 K1 N1
			7
10		$\frac{1}{2} \left[\frac{2}{x+5} - 3 \right]_{-1}^2$ $\frac{1}{2} \left[\left(\frac{2}{2+5} - 3 \right) - \left(\frac{2}{-1+5} - 3 \right) \right]$ $-\frac{3}{28}$	P1 K1 N1
			3

NO SOALAN		JAWAPAN	MARKAH	
11		$\frac{x[2(x-5)]-1(x-5)^2}{x^2} @ 1-\frac{25}{x^2}$	K1	
		$\frac{x^2-25}{x^2}=0 @ 1-\frac{25}{x^2}=0$	K1	
		(5,0) , (-5,-20)	N1	
		$\frac{x^2(2x)-2x(x^2-25)}{(x^2)^2} @ \frac{50}{x^3}$	K1	
		$x=5, \frac{d^2y}{(dx)^2}=\frac{2}{5}>0$, (5,0) ialah titik minimum dan		
		$x=-5, \frac{d^2y}{(dx)^2}=-\frac{2}{5}<0$, (-5,-20) ialah titik maksimum	N1	
			5	
12	a	${}^nC_1(0.25)^1(0.75)^{n-1}=10 {}^nC_0(0.25)^0(0.75)^n$ $0.025n=0.75 @$ setara 30	K1 K1 N1	
	b	$30(0.25)(0.75)$ 5.625	K1 N1	
			5	
	BAHAGIAN B			
13	a	i	$ 5-2(-2) @ 5-2(8) $ 9 dan 11	K1 N1
		ii	 Graf bentuk $\wedge$ dilakar Titik-titik $(-2, -8)$, $(\frac{5}{2}, 1)$ dan $(8, -10)$ dilabel	P1 P1

NO SOALAN		JAWAPAN	MARKAH
	b	$\frac{4}{k(x)+2} = 2x - 9$ $k(x)[(2x - 9)] = 4 + 18 - 4x$ $k(x) = \frac{22-4x}{2x-9}, x \neq \frac{9}{2}$	P1 K1 N1, N1
			8
14	a	$\frac{2^{2x}}{2} - 9 \left(\frac{2^x}{2^2} \right) + 1 = 0$ Anggap $2^x = u$ $(2u - 1)(u - 4) = 0 @ \quad 2^x = \frac{1}{2}, 2^x = 4$ -1, 2	K1 K1 N1
	b	$\frac{\log_4 4}{\log_4 x} = 2 + \log_4 2^4$ $\frac{1}{4^4}$ $\sqrt{2}$ atau 1.414	K1 K1 N1
	c	$4(2) + 2\sqrt{2} + 2\sqrt{2} + 1$ $9 + 4\sqrt{2}$	K1 N1
			8
15	a	$\sin \alpha = \sqrt{1 - p^2}$ kosek $\alpha = \frac{1}{\sqrt{1-p^2}}$	K1 N1
	b	$\frac{(1+\cos x)^2 + \sin^2 x}{\sin x (1+\cos x)}$ $\frac{(1+\cos x)^2 + (1-\cos^2 x)}{\sin x (1+\cos x)} \quad \text{or} \quad \frac{2(1+\cos x)}{\sin x (1+\cos x)}$ 2 kosek x	K1 K1 N1

NO SOALAN		JAWAPAN	MARKAH
	c	i	Sudut rujukan 60°
			$-\cos (480^\circ - 360^\circ) @ -\cos 60^\circ$
			$-\frac{1}{2}$
			8

TAMAT