

TERHAD

PP Perc SPM 2026 AddMath (k1) N9

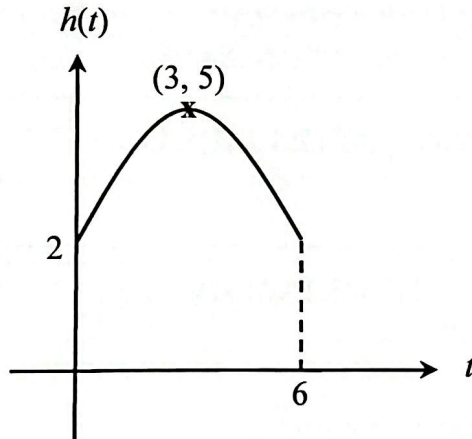
No			SKEMA	MARKAH	MARKAH PENUH
1	(a)		$X = \frac{1}{x^3}$ $Y = \frac{y}{x^3}$	N1 N1	2
	(b)		$0 = -7 + 5(h)$	K1	2
			$h = \frac{7}{5}$	N1	
					4
2	(a)		$a = \frac{1}{2}r$ atau $r = 2a$	P1	4
			$(\frac{1}{2}r)r^{3-1} = 1372$ atau $a(2a)^2 = 1372$	K1	
			$r = 14$	N1	
			$a = 7$	N1	
	(b)		$\frac{7}{13}(14^n - 1)$ atau setara	N1	1
					5
3	(a)		$(\frac{-4+0}{2}, \frac{2+0}{2})$	K1	2
			$(-2, 1)$	N1	
	(b)		$\frac{1}{2} \times m_{CE} = -1$	K1	3
			$y - 1 = -2(x - (-2))$ atau $c = -3$	K1	
			$y = -2x - 3$	N1	
					5

No			SKEMA	MARKAH	MARKAH PENUH
4	(a)		p^2	N1	1
	(b)		$\sqrt{1-p^2}$	P1	2
			$\frac{1}{\sqrt{1-p^2}}$	N1	
					3
5	(a)		9C_3	K1	2
			84	N1	
	(b)		$(9-1)!$ atau $(8-1)! \times 2!$	K1	3
			$(9-1)! - (8-1)! \times 2!$	K1	
			30240	N1	
					5
6	(a)		$\overrightarrow{OA} = \begin{pmatrix} -3 \\ -1 \end{pmatrix}$	N1	1
	(b)		$\overrightarrow{A'B} = \overrightarrow{A'O} + \overrightarrow{OB}$ dan $\overrightarrow{A'B} = 3\hat{i} - \hat{j} + 3\hat{i} + 4\hat{j}$	K1	
			$\overrightarrow{A'B} = \frac{6\hat{i} + 3\hat{j}}{\sqrt{(6)^2 + (3)^2}}$	K1	
			$\overrightarrow{A'B} = \frac{2}{\sqrt{5}}\hat{i} + \frac{1}{\sqrt{5}}\hat{j}$	N1	3
					4
7	(a)		$-9k$	P1	1
	(b)		$\frac{5(2x-3)^{-1}}{2(-1)} + c$	K1	3
			$4 = -\frac{5}{2(2(1)-3)} + c$	K1	
			$y = -\frac{5}{2(2x-3)} + \frac{3}{2}$	N1	
					4

No		SKEMA	MARKAH	MARKAH PENUH
8	(a)	$f(x) = \frac{2x-1}{3}$	P1	1
	(b)	$f^{-1}(x) = \frac{3x+1}{2}$ atau $g(x) = gf(f^{-1}(x))$	P1	3
		$= \frac{5\left(\frac{3x+1}{2}\right) + 7}{2}$	K1	
		$= \frac{15x+19}{4}$	N1	
				4
9	(a)	$\log_c d = \left(\frac{1}{3}\right)^3$ atau $d = c^{\frac{1}{27}}$	K1	2
		27	N1	
	(b)	$20(2^x)^{\frac{1}{2}} - (2^x)(2^2) = 24$	K1	4
		$a = 2^{\frac{x}{2}}$ dan $(a-2)(a-3) = 0$ ATAU $a = 2^x$ dan $(\sqrt{a}-2)(\sqrt{a}-3) = 0$	K1	
		$2^1 = 2^{\frac{x}{2}}$, $3 = 2^{\frac{x}{2}}$ (reject) ATAU $2^2 = 2^x$, $9 = 2^x$ (reject)	K1	
		2	N1	
				6
10	(a)	$\frac{9}{16}$	P1	1
	(b)	(i) ${}^nC_n(0.75)^n(0.25)^{n-n} = 0.3164$	K1	5
		$n = \frac{\log_{10} 0.3164}{\log_{10} 0.75}$	K1	
		$n = 4$	N1	
		(ii) $1 - P(X=0)$ dan $1 - {}^4C_0(0.75)^0(0.25)^4$ atau setara	K1	
		0.9961	N1	
				6

No		SKEMA	MARKAH	MARKAH PENUH
11	(a)	$\angle POB = 1.176$	P1	3
		$s = 5(2.352)$	K1	
		11.76	N1	
	(b)	$(5)(2(3.142) - 2.352)$ atau $AC^2 = 20^2 + 21^2 - 2(20)(21)\cos(45.24)$ atau setara	K1	3
		$19.66 + 15.80 + 9 + 8$	K1	
		52.46	N1	
	(c)	$\frac{1}{2}(20)(21)\sin(45.24)$ atau $\frac{1}{2}(5)^2(2(3.142))$ atau $(3.142)(5)^2$ atau setara	K1	3
		$\frac{1}{2}(20)(21)\sin(45.24) - \frac{1}{2}(5)^2(2(3.142))$ atau setara	K1	
		70.56	N1	
				9
12	(a)	$\frac{du}{dx} = 3$ dan $\frac{dy}{du} = 2(3)u^{3-1}$ Terima semua huruf lain sebagai u	K1	3
		$\frac{dy}{dx} = 6u^2 \times 3$	K1	
		$\frac{dy}{dx} = 18(3x - 4)^2$	N1	
	(b)	(i) $\frac{dy}{dx} = 18(3(1.20) - 4)^2$ dan 2.88 atau setara	N1	1
		(ii) $2.88 \times (1.19 - 1.20)$ dan -0.0288 atau setara	K1	6
		$2(3(1.20) - 4)^3 + (-0.0288)$	K1	
		-0.1568	N1	
		$\frac{-0.0288}{-0.128} \times 100$	K1	
		22.5 %	N1	
				9

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No		SKEMA	MARKAH	MARKAH PENUH
13	(a)	$-\frac{1}{3}\left[t^2 - 6t + \left(\frac{-6}{2}\right)^2 - \left(\frac{-6}{2}\right)^2 - 6\right]$	K1	4
		$-\frac{1}{3}(t-3)^2 + 5$	N1	
		$3p = 3 \text{ atau } \frac{5}{p} = 5$	K1	
		$p = 1$	N1	
	(b)	 Bentuk graf dan paksi-paksi guna pembaris Titik maksimum, 2 titik lain, label paksi-paksi dan asalan.	P1 P1	2
	(c)	$-\frac{1}{3}t^2 + 2t + 2 = 0 \text{ dan } \frac{-(2) \pm \sqrt{(2)^2 - 4(-\frac{1}{3})(2)}}{2(2)}$	K1	2
		$t = 6.873$	N1	
				8

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No			SKEMA	MARKAH	MARKAH PENUH
14	(a)		$S_n = a + a + d + a + 2d + \dots + a + (n-1)d$ $S_n = a + (n-1)d + a + (n-2)d + \dots + a$	K1	3
			$2S_n = n[2a + (n-1)d]$	K1	
			$S_n = \frac{n}{2}[2a + (n-1)d]$	N1	3
	(b)	(i)	$2d = 15$	K1	
			$\frac{15}{2}$ atau setara	N1	
		(ii)	$T_2 = y = x + \frac{15}{2}$ atau $T_3 = z = x + 2\left(\frac{15}{2}\right)$	K1	3
			$3\left(x + \frac{15}{2}\right) = 2\left(x + x + \frac{15}{2}\right)$	K1	
			$x = 30$	N1	
					8
15	(a)	(i)	Andaikan $\angle A = \angle B = \theta$ $\sin(\theta + \theta) = \sin \theta \cos \theta + \sin \theta \cos \theta$	K1	2
			$\sin 2\theta = 2 \sin \theta \cos \theta$	N1	
		(ii)	$2 \sin 2\theta = 1$ atau setara	K1	3
			30° dilihat	N1	
			$\theta = 15^\circ, 75^\circ, 195^\circ, 255^\circ$	N1	
	(b)		1 atau 2 dilihat	P1	3
			$\frac{\frac{2}{2} + \frac{2}{1}}{1 - \left(\frac{2}{2}\right)\left(\frac{2}{1}\right)}$	K1	
			-3	N1	
					8