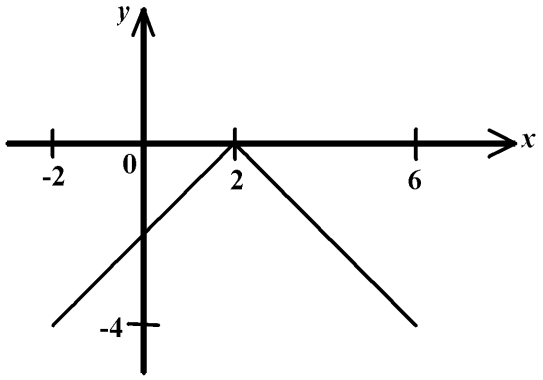
PRAKTIS BESTARI JUJ 2024
MATEMATIK TAMBAHAN

PERATURAN PEMARKAHAN

KERTAS 1 SET 1

No			PEMARKAHAN	MARKAH	MARKAH PENUH
1			$\log_{10} y = (\log_{10} q)x + \log_{10} p$	K1	
			$\log_{10} p = 4$ **DAN** $\log_{10} q = -\frac{4}{(-3)}$ *or* $\log_{10} q = \frac{4-0}{0-(-3)}$	K1	
			$p = 10000$, $q = 21.54$	N1	
					3
2	(*a*)		$\frac{1}{2}\left\|((-3)(2)+(5)(-6)+(-1)(h))-((h)(5)+(2)(-1)+(-6)(-3))\right\| = 38$	K1	
			4	N1	
	(*b*)		$M_{QR} = -\frac{1}{4}$ atau / *or* $y-5 = -\frac{1}{4}(x-3)$	K1	
			$4y + x = 23$ atau *setara / or equivalent*	N1	
					4

3	(*a*)	(i)	-4	N1	
		(ii)	$y^2 = 5 - x$	K1	
			$g(x) = \pm\sqrt{5-x}\ \ , x < 5$	N1	
	(*b*)		 Lukis bentuk v terbalik dengan betul Pintasan-x , domain betul dan $(-2,-4),(2,0),(4,-4)$ dilihat	P1 P1	
			$-4 \le f(x) \le 0$	N1	
					6
4	(*a*)		$7i + 14j$	N1	
	(*b*)		$\sqrt{(7)^2 + (14)^2}$	K1	
			$\frac{1}{\sqrt{245}}(7\underline{i} + 14\underline{j})$	N1	
					3

5	(*a*)		$p^2-4(1)(3p-5)<0$	P1	
			atau setara	K1	
			$u=2, v=10$	N1	
	(*b*)		Gantikan $(0,-3)$ ke dalam $y=a(x-2)(2x+3)$ atau setara	K1	
			$y=\frac{1}{2}(x-2)(2x+3)$	N1	
					5
6			$\log_3(x+1)-\log_9 x^{10}+\log_3 x^4$	P1	
			$\log_3(x+1)-\frac{\log_3 x^{10}}{2\log_3 3}\log_9 x^{10}+\log_3 x^4$	K1	
			$\log_3\frac{(x+1)}{x}$	N1	
			$\sqrt{3}=\frac{x+1}{x}$	K1	
			$x=\frac{1}{\sqrt{3}-1}$	K1	
			$x=\frac{\sqrt{3}+1}{2}$	N1	
					6
7	(*a*)		$\frac{11k-5}{36}=\frac{144}{11k-5}$	K1	
			Selesaikan persamaan kuadratik / *Solve quadratic equation*	K1	
			7	N1	
	(*b*)		2	N1	
					4

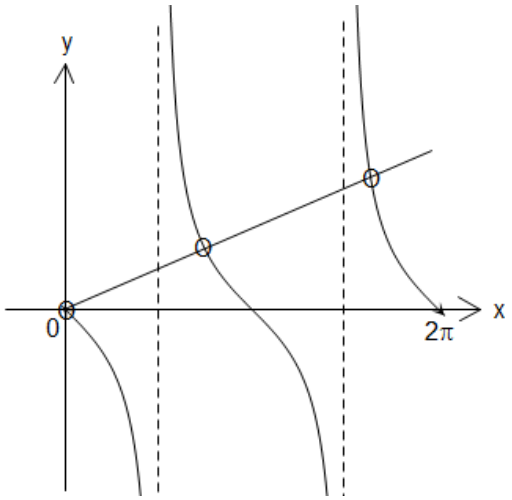
8	(*a*)		$had \underset{\delta x \to 0}{} \frac{2}{3}x + \frac{1}{3}\delta x$	K1	
			$\frac{dy}{dx} = \frac{2}{3}x$	N1	
	(*b*)	(i)	$\frac{dy}{dx} = \frac{(x+1)[1] - x[1]}{(x+1)^2}$	K1	
			$\frac{1}{(q+1)^2}$	N1	
		(ii)	$-p \times m_T = -1 \quad DAN \quad \frac{1}{(q+1)^2} = \frac{1}{p}$	K1	
			$q = \pm\sqrt{p} - 1$	N1	
					6
9	(*a*)	(i)	${}^{18}P_4 \times {}^{14}C_8$	K1	
			220 540 320	N1	
		(ii)	${}^{2}P_2 \times {}^{6}P_2 \times {}^{14}C_8$	K1	
			180 180	N1	
	(b)		$(11-1)!$	K1	
			$(11-1)! \times 2!$	K1	
			7 257 600	N1	
					7
10	(*a*)		$3b + \frac{2}{9} + a + 3b = 1$	K1	
			$a = \frac{7}{9} - 6b$	N1	

	(*b*)		$\left(\frac{7}{9}-6b\right)+3b$	K1	
			$3b={}^{3}C_{0}p^{0}q^{3}$	K1	
			$\frac{7}{9}-q^{3}$	N1	
					5

11	(*a*)		$\frac{1}{2}(x)^{2}\left(\frac{40°\times\pi}{180°}\right)$	K1	
			$\frac{1}{9}\pi x^{2}$	N1	
	(*b*)		$\frac{1}{2}(x)(x)\sin 40°$ ATAU $\frac{1}{2}\left(2x\sin\frac{40°}{2}\right)\left(x\cos\frac{40°}{2}\right)$	K1	
			$\frac{1}{9}\pi x^{2}-0.3214x^{2}=1.15$	K1	
			$x=6.441$	N1	
					5
12	(*a*)		$\frac{\text{Kamir}\left(2x+k\right)\text{terhadap}\,x}{\frac{2x^{2}}{2}+kx+c}$	K1	**12**
			Ganti $(3,10)$ ke dalam $y=\frac{2x^{2}}{2}+kx+c$ dan selesaikan c	K1	
			$y=x^{2}+kx+1-3k$	N1	
	(*b*)	(i)	$\frac{\text{Kamir}\left(x^{2}+kx+1-3k\right)\text{terhadap}\,x \quad \text{DAN}\quad \text{Samakan dengan } 30}{\left[\frac{x^{3}}{3}+\frac{kx^{2}}{2}+x-3kx\right]_{-2}^{4}=30}$	K1	

			Guna had $\int_{-2}^{4}$ ke dalam kamirannya $\left[\left(\frac{(4)^3}{3}+\frac{(4)^2 k}{2}+(4)-3k(4)\right)-\left(\frac{(-2)^3}{3}+\frac{(-2)^2 k}{2}+(-2)-3k(-2)\right)\right]=30$	K1	
			$k=0$	N1	

		(ii)	$y=17$ Dilihat DAN Guna rumus isipadu silinder $V_1=\pi(4)^2(17)$	K1	
			Kamir $\pi(y-1)$ terhadap y DAN Guna had $\int_1^{17}$ ke dalam kamirannya $V_2=\pi\left[\frac{y^2}{2}-y\right]$ $\pi\left[\left(\frac{(17)^2}{2}-(17)\right)-\left(\frac{(1)^2}{2}-(1)\right)\right]$	K1	
			V_1-V_2 , $(V_1>V_2)$	K1	
			144π	N1	
					10
13	(*a*)		$2\pi\left(\frac{3+\sqrt{18}}{\sqrt{6}}\right)\times t=2\pi\left(10\sqrt{2}+5\right)$	P1	
			$\frac{10\sqrt{12}+5\sqrt{6}}{3+3\sqrt{2}}\times\frac{\left(3-3\sqrt{2}\right)}{\left(3-3\sqrt{2}\right)}$	K1	
			$\frac{60\sqrt{12}-60\sqrt{24}+30\sqrt{6}-30\sqrt{12}}{9-18}$	K1	
			$-\frac{10}{3}\sqrt{3}+5\sqrt{6}$	N1	
	(*b*)		$\left(3\bullet 2^{\frac{1}{2}}\right)^2=\left(2^{\frac{x}{2}}\right)^2+\left(2^{x+1}\right)^2$	P1	
			Guna mana-mana hukum indeks $2^{\frac{1}{2}(2)}$ *ATAU* $2^2\times 2^{2x}$	K1	
			Selesaikan persamaan kuadratik DAN banding indeks $(y-2)(4y+9)=0$ DAN $2^x=2^1$	K1	
			$x=1$	N1	
					8

14	(*a*)		Guna mana-mana rumus sudut berganda $1-(1-2\sin^2 x)+2\sin x kosx$ @ $1+\left(1-2\sin^2 x\right)+2\sin x kosx$	K1	
			$\frac{\sin\theta}{kos\theta}$	K1	
			$\tan\theta$	N1	
					
	(*b*)		Bentuk graf tangen negatif.	P1	
			1 kitaran dan bersama 2 asimptot	P1	
			Persamaan $y=\frac{2x}{\pi}$	P1	
			Lukis garis lurus kecerunan positif melalui asalan	K1	
			3	N1	
					8

15	(*a*)		-5	N1	
	(*b*)		$\frac{3-x}{2}$	P1	
			$-1-2\left(\frac{3-x}{2}\right)$	K1	
			$g(x)=x-4$	N1	
	(*c*)		$(x-4)-4$	K1	
			$g^2(x)=x-8$	NI	
			$g^3(x)=(x-4)-8$ // $(x-8)-4$ *DAN* $g^4(x)=(x-8)-8$ // $(x-4)-12$ // $(x-12)-4$	K1	
			$g^2(x)=x-2(4)$ DAN $g^3(x)=x-3(4)$ DAN $g^4(x)=x-4(4)$ DAN $g^{30}(x)=x-30(4)$ DAN $g^{30}(x)=x-120$	N1	
					8