PRAKTIS BESTARI JUJ 2024
MATEMATIK TAMBAHAN

PERATURAN PEMARKAHAN

KERTAS 1 SET 2

No			PEMARKAHAN	MARKAH	MARKAH PENUH
1	(*a*)		Nampak garis mengufuk memintas lengkung pada satu titik.	P1	
			Hubungan satu kepada satu.	P1	
	(*b*)		$f^{-1}(x)=\dfrac{1-2x}{x}, x\neq 0$	N1	
					3
2	(*a*)		$\dfrac{50}{3}=\dfrac{n(10)+m(50)}{m+n}$ @ $15=\dfrac{n(20)+(m)(-10)}{m+n}$	K1	
			$1:5$	N1	
	(*b*)		$\left(-\dfrac{3}{4}\right)m_2=-1$	K1	
			$y-15=\dfrac{4}{3}\left(x-\dfrac{50}{3}\right)$ atau setara	K1	
			$y=\dfrac{4}{3}x-\dfrac{65}{9}$	N1	
					5
3	(*a*)		$-x^2+10x-13\geq 8$ OR $-x^2+10x-13=8$	K1	
			$(x-7)(x-3)\leq 0$ atau setara OR $(x-7)(x-3)=0$	K1	
			$3\leq x\leq 7$	N1	
	(*b*)		$(-15)^2-4(1)(2h-k)=0$ OR $\alpha+\alpha=-(-15)$ dan $\alpha(\alpha)=2h-k$	K1	
			$h=\dfrac{225+4k}{8}$ atau setara	N1	

	5

4	(*a*)		$\cos\angle POQ = \frac{4}{6}$ atau $\sin\angle POQ = \frac{\sqrt{6^2-4^2}}{6}$ atau $\tan\angle POQ = \frac{\sqrt{6^2-4^2}}{4}$	P1	
			0.8412	N1	
	(*b*)		$6(0.8412)$	K1	
			$6(0.8412)+\sqrt{6^2-4^2}+2$	K1	
			11.52	N1	
					5
5	(*a*)		Menggunakan hukum hasil darab atau hukum hasil bahagi	P1	
			Menggunakan hukum kuasa	P1	
			$\frac{5}{2}$	N1	
	(*b*)		$e^2 = 8-x$	K1	
			0.6109	N1	
					5
6			$m^2+n^2=p^2$ OR $\sin A = \frac{m}{p}$ DAN $\cos A = \frac{n}{p}$	P1	
			$\left(\frac{m}{p}\right)^2+\left(\frac{n}{p}\right)^2=1$	K1	
			$\sin^2 A + kos^2 A = 1$	N1	
					3

7			$(y-2)=mx^2+c$	P1	
			$m=\frac{6-2}{1-3}$ @ $m=\frac{2-6}{3-1}$ **DAN** $6=(-2)(1)+c$ @ $2=(-2)(3)+c$ **DAN** $c=6+2$ @ $c=2+6$ @ $c=8$ **OR** $(y-x)-6=(-2)(x^2-1)@(y-x)-2=(-2)(x^2-3)$	K1	
			$y=-2x^2+x+8$	N1	
					3
8	(*a*)		$(5\sin A-2)(3\sin A+1)=0$	P1	
			Sudut rujukan : $23.58°$ atau $19.47°$	P1	
			$23.58°,156.42°,199.47°,340.53°$	N1	
	(*b*)		Sudut rujukan : $42.90°$ **OR** $2kos^2A-1=0.7325$ atau setara	P1	
			$2x=42.90°,317.10°,402.90°,677.10°$ **OR** sudut rujukan : $21.45°$	P1	
			$21.45°,158.55°,201.45°,338.55°$	N1	
					6
9	(*a*)	(i)	$\overrightarrow{UM}=\overrightarrow{UN}+\overrightarrow{NM}$	P1	
			$39\left(p-\frac{15}{2}q\right)$	N1	
			$\overrightarrow{TM}=117\left(p-\frac{45}{2}q\right)$	N1	

		(ii)	$53\,\underset{\square}{p}+10\,\underset{\square}{q}$	N1	

	(*b*)		Bandingkan pekali vektor p dan vektor q untuk mendapatkan nilai λ $\overrightarrow{LN} = \lambda \overrightarrow{UN}$ atau setara	K1	
			$\lambda_p = \frac{53}{3}$ DAN $\lambda_q = \frac{2}{3}$ atau setara **DAN** Tidak segaris. $\lambda_p \neq \lambda_q$	N1	
	(*c*)		$\lvert\overrightarrow{TM}\rvert = \sqrt{(117\times 1)^2 + (\frac{-45}{2}\times 2)^2}$	K1	
			$9\sqrt{194}$	N1	
					8
10		(i)	$P(X=1) = 7P(X=0)$	P1	
			${}^nC_1(0.2)^1(0.8)^{n-1} = 7\times {}^nC_0(0.2)^0(0.8)^{n-0}$	K1	
			$n = 28$	N1	
		(ii)	$28\left(\frac{1}{5}\right)$	K1	
			5	N1	
					5
11	(*a*)		$10!$ atau $2!$ atau $9!$ atau ${}^{10}p_{10}$ atau ${}^2p_2$ atau ${}^9p_9$	P1	
			${}^{10}p_{10} - \left({}^2p_2 \times {}^9p_9\right)$	K1	
			2903040	N1	
	(*b*)		${}^5c_1 \times {}^3c_2$ atau ${}^5c_2 \times {}^3c_1$	P1	
			${}^5c_1 \times {}^3c_2 + {}^5c_2 \times {}^3c_1$	K1	

			45	N1	
					6

12	(*a*)		$p = a^x$, $\log_a p = x$ atau $q = a^y$, $\log_a q = y$ atau $\log_a pq = z$, $pq = a^z$	P1	
			$pq = a^{x+y}$ atau $a^z = a^{x+y}$	K1	
			$\log_a pq = \log_a p + \log_a q$	N1	
	(*b*)	(i)	$\log_{ab} \sqrt{p} = \dfrac{\log_a \sqrt{p}}{\log_a ab}$	P1	
			$\log_a p = m \Leftrightarrow p = a^m$ $\log_b p = n \Leftrightarrow p = b^n$ $\therefore a^m = b^n$ $a^{\frac{m}{n}} = b$	K1	
			$\dfrac{\frac{1}{2}m}{1+\frac{m}{n}}$	K1	
			$\dfrac{mn}{2(m+n)}$	N1	
		(ii)	$\dfrac{\log_a c}{\log_a \frac{b}{a}}$	K1	
			$\dfrac{\sqrt{5}}{\sqrt{2}-1}$	N1	
					9

13	(*a*)	(i)	$a+b=-(n-1)$ atau ab = 6	K1	
			$\frac{3(-(n-1))}{6}$ dan $\frac{9}{6}$	K1	
			$2x^2-(1-n)x+3=0$	N1	
		(ii)	$\frac{a+b}{2}=p-1$	K1	
			$p=\frac{a+b}{2}+1$ atau setara	N1	
	(*b*)		$-\left(x^2-4kx+\left(\frac{-4k}{2}\right)^2-\left(\frac{-4k}{2}\right)^2\right)-p$	K1	
			$2k=2$ atau setara dan $k+4k^2=4k^2-p$	K1	
			$k=1, p=-1$	N1	
					8
14	(*a*)		$t=\frac{152}{p^2}$	P1	
			$\pi p(3p)$ *atau* $2\pi p\left(\frac{152}{p^2}\right)+\pi(p)^2$	K1	
			$\pi p(3p)+2\pi p\left(\frac{152}{p^2}\right)+\pi(p)^2$	K1	
			$4\pi\left(p^2+\frac{76}{p}\right)$	N1	
	(*b*)		$\frac{dL}{dp}=8\pi p-\frac{304\pi}{p^2}$ dan selesaikan $\frac{dL}{dp}=0$	K1	
			$\frac{d^2L}{dp^2}=8\pi+\frac{608\pi}{(3.362)^3}$ (>0)	N1	
			$L_{\min}=4\pi\left(3.362^2+\frac{76}{3.362}\right)$	K1	
			135.63π // 426.16	N1	

					8
15	(*a*)		$d_1 = x + 30 - x$ dan $d_2 = (x + 60) - (x + 30)$ Janjang aritmetik, $d = 30$	P1	
	(*b*)		$\frac{45}{2}\left[2x + (45-1)(30)\right] = 30600$	K1	
			$\frac{27}{2}\left[2(20) + (27-1)(30)\right]$ atau / *or* $\frac{15}{2}\left[2(20) + (15-1)(30)\right]$	K1	
			$\frac{27}{2}\left[2(20) + (27-1)(30)\right] -$ $\frac{15}{2}\left[2(20) + (15-1)(30)\right]$	K1	
			7620	N1	
	(*c*)		$20 + (n-1)(30) = 1160$	K1	
			39	N1	
			Bawang Merah atau B	N1	
					8