PRAKTIS BESTARI JUJ 2024
MATEMATIK TAMBAHAN

PERATURAN PEMARKAHAN

KERTAS 2 SET 1

No	PEMARKAHAN			MARKAH	MARKAH PENUH
1			$y = 2x - 1$ or $x = \frac{y+1}{2}$	K1	
			$2x^2 + (2x-1)^2 - 4 = 0$ or $2\left(\frac{y+1}{2}\right)^2 + y^2 - 4 = 0$	K1	
			$x = \frac{-(-4) \pm \sqrt{(-4)^2 - 4(6)(-3)}}{2(6)}$ or $y = \frac{-(2) \pm \sqrt{(2)^2 - 4(3)(-7)}}{2(3)}$	K1	
			$x = 1.115 \quad and \quad y = 1.230$	N1	
			$x = -0.448 \ and \ y = -1.896$	N1	
					5
2	(a)		$\int 4\left(2x^3 + \frac{1}{x^2}\right)dx = 2x^4 - \frac{4}{x}$	K1	
			$\frac{1}{4}\left(2x^4 - \frac{4}{x}\right)$	N1	
	(b)		$\int_{-1}^{k} 3 \, dx - 10 = 8$	K1	
			Kamir 3 terhadap x DAN Guna had $\int_{-1}^{k}$ ke dalam kamirannya / $\left[3(k) - 3(-1)\right]$	K1	
			$k = 5$	N1	
					5
3	(a)		$a + (7-1)(250) = 4a$	K1	

			500	N1	

	(*b*)		$\frac{n}{2}\left[2(500)+(n-1)(250)\right]>13500$	K1	
			$(n-9)(n+12)>0$	K1	
			$n=10$	N1	
	(*c*)		$\frac{12}{2}\left[2(500)+(12-1)(250)\right]$	K1	
			$22500\times(25-7)$	K1	
			405000	N1	
					8
4	(*a*)	(i)	$1-2\sin^2 x$	K1	
			$1-2a^2$	N1	
		(ii)	$\frac{a}{\sqrt{1-a^2}}$	N1	
	(*b*)	(i)	Guna rumus identiti	P1	
			$2\sin xkosx=\sin 2x$	N1	
		(ii)	Sudut rujukan $=30^\circ$	P1	
			$2x=30^\circ,150^\circ,390^\circ,510^\circ$	K1	
			$\frac{\pi}{12},\frac{5\pi}{12},\frac{13\pi}{12},\frac{17\pi}{12}$	N1	
					8
5	(*a*)		2.269	N1	
	(b)		$BD=5$ atau $CD=18.03$	P1	
			$10(2.269)$	K1	
			$10+10+10(2.269)+5+18.03$	K1	
			65.72	N1	
					5

6	(*a*)	(i)	$m = 2$	N1	
			$n = 7$	N1	
		(ii)	$-k = \frac{2(12)+7(h)}{2+7}$ atau / *or* $-3h = \frac{2(12)+7(3k)}{2+7}$	K1	
			Selesaikan persamaan serentak	K1	
			$h = 3$, $k = -5$	N1	
	(*b*)	(i)	$\sqrt{(x-3)^2+(y-(-15))^2}$ atau $\sqrt{(3-5)^2+(-15-(-9))^2}$	K1	
			$\sqrt{(x-3)^2+(y-(-15))^2} = \sqrt{(3-5)^2+(-15-(-9))^2}$	K1	
			$x^2+y^2-6x+30y+198=0$	N1	
		(ii)	$0^2+y^2-6(0)+30y+198=0$	K1	
			$b^2-4ac=-740, <0$ dan TIDAK	N1	
					10
7	(*a*)		$f(x)=a(x-4)^2+q$	P1	
			Menggantikan $(0,1.6)$ atau $\left(7,\frac{143}{64}\right)$ ke dalam $f(x)=a(x-4)^2+q$	K1	
			Menyelesaikan persamaan linear serentak	K1	
			$a = -\frac{29}{320}$	N1	
			$q = \frac{61}{20}$ / / 3.05	N1	
			Tidak, jaringan hanya berjaya dibuat pada ketinggian maksimum 3.05 m, bukan pada 3.2 m.	N1	
	(*b*)		Selesaikan $2 = -\frac{29}{320}(x-4)^2+\frac{61}{20}$	K1	
			0.5961 m, 7.4039 m	N1	
			7.4039 m	N1	

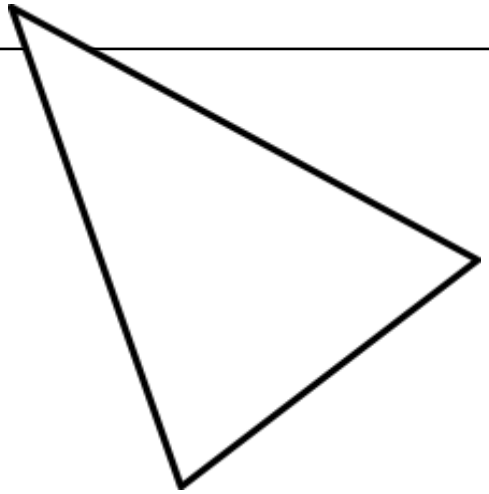
	9

8	(*a*)	(i)	$H = -0.97$	P1	
			$\frac{X-165}{5} = -0.97$	K1	
			160.15	N1	
		(ii)	$P\left(\frac{165-165}{5}\right) < Z < \left(\frac{175-165}{5}\right)$	P1	
			$0.5 - 0.0228$ DAN 1500×0.4772	K1	
			715	N1	
	(*b*)	(i)	$P\left(Z > \frac{4-3}{0.65}\right)$	P1	
			0.0620	N1	
		(ii)	500×0.062	K1	
			31	N1	
					10

	9	(*a*)	(i)	$\overrightarrow{XY} = \overrightarrow{XE} + \overrightarrow{EY}$ ATAU $\overrightarrow{DX} = \overrightarrow{DF} + \overrightarrow{FX}$ ATAU $\overrightarrow{GE} = \overrightarrow{GF} + \overrightarrow{FE}$ ATAU $\vec{YF} = \vec{YD} + \vec{DF}$	P1	
				$-u$	N1	
			(ii)	$2u + v$	N1	
		(*b*)		$\overrightarrow{YF} = u - v$	K1	
				$\overrightarrow{FG} = \frac{4}{3}v - \frac{4}{3}u$	K1	
				$\overrightarrow{GE} = \frac{4}{3}u + \frac{2}{3}v$	N1	
				$\overrightarrow{DX} = \lambda\overrightarrow{GE}$ atau $\overrightarrow{GE} = \lambda\overrightarrow{DX}$	K1	
				$\lambda = \frac{3}{2}$ atau $\lambda = \frac{2}{3}$	N1	
				$\overrightarrow{DX} = \frac{3}{2}\overrightarrow{GE}$ // $\overrightarrow{GE} = \frac{2}{3}\overrightarrow{DX}$	K1	
				$DX : GE = 3 : 2$	N1	
						10
	10	(*a*)		$\frac{dy}{dx} = \frac{1}{4}x - 2$ dan samakan $\frac{dy}{dx} = 0$	K1	
				$x = 8$	N1	
				$y = \frac{1}{8}(8)^2 - 2(8)$	K1	
				$y = -8$	N1	
				Jarak terpendek = $12 - 8$	K1	
				$4\ m$	N1	
		(*b*)		$\frac{1}{4} \times m_N = -1$	K1	
				$y - \left(-\frac{63}{8}\right) = -4(x - 7)$ atau guna $y = mx + c$	K1	
				$y + 4x - \frac{161}{8} = 0$	N1	

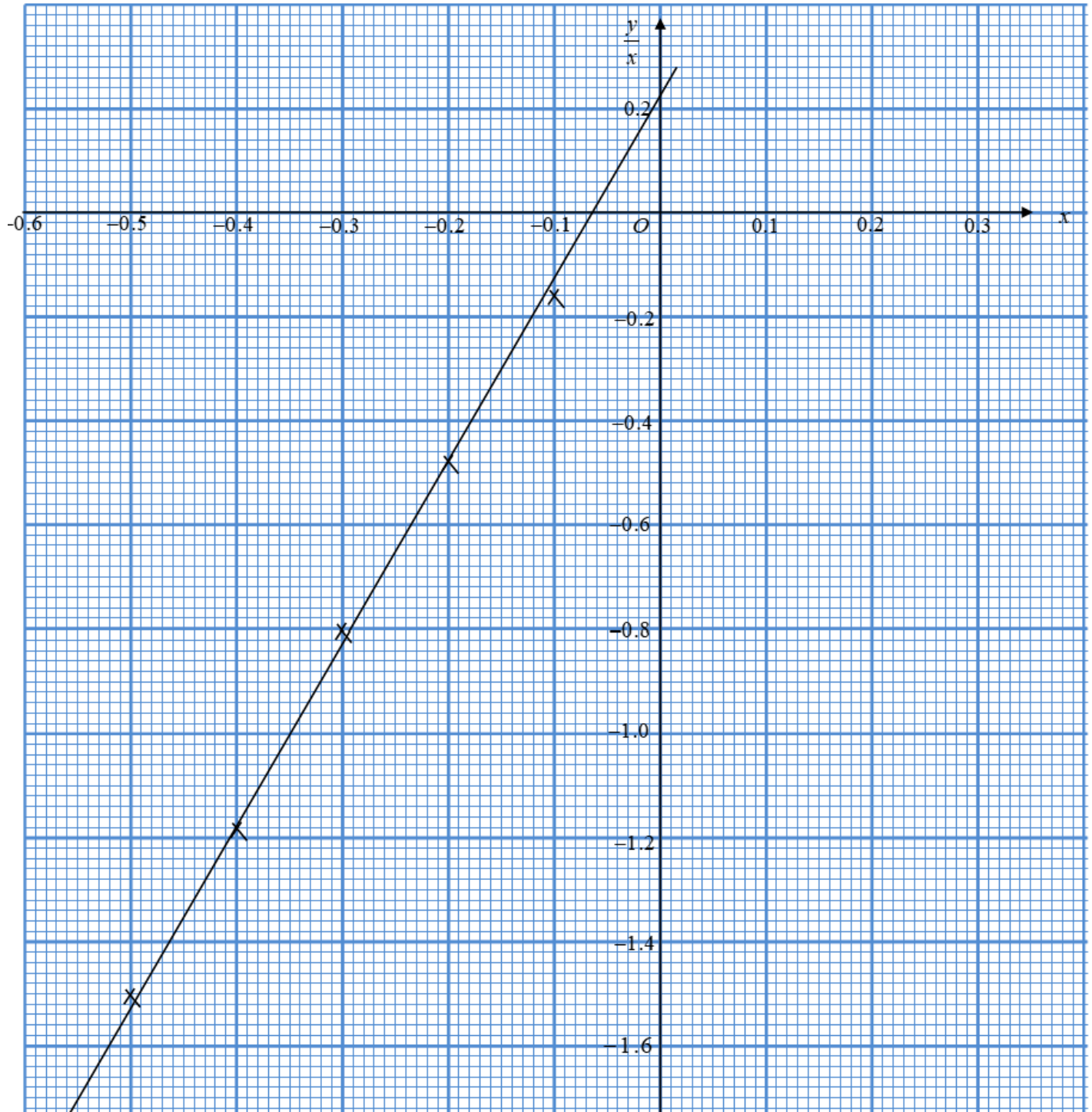
				$\frac{161}{8} \neq 16,$ **TIDAK** melalui titik Q.	N1	
						10
	11	(a)		<table><tr><td>$\frac{y}{x}$</td><td>−1.88</td><td>−1.50</td><td>−1.18</td><td>−0.80</td><td>−0.48</td><td>−0.16</td></tr></table>	N1	
		(b)		Rujuk Graf pada lampiran Paksi-paksi betul, skala seragam dan sekurang-kurangnya 1 titik diplot betul.	K1	
				Semua 6 titik diplot dengan betul.	N1	
				Garis lurus penyuaian terbaik dilukis [Sekurang-kurangnya 5 titik diplot]	N1	
		(c)	(i)	0.7008	N1	
			(ii)	$\frac{y}{x} = px + (q-1)$	P1	
				$p = *m$	K1	
				$p = 3.5$	N1	
				$q - 1 = 0.22$	K1	
				$q = 1.22$	N1	
						10
	12	(a)		$a = -8$ ms^{-2}	N1	
		(b)		$t = 4$	P1	
				Kamirkan a dan gantian $t = 0$ dan $v = 12$ DAN Gantikan $t = 4$	K1	
				-4 ms^{-1}	N1	
		(c)		Gantikan $v = 0$ dan selesaikan persamaan kuadratik	K1	
				$t = 2$ dan $t = 6$	N1	
		(d)		Kamirkan $S_1 = \int_0^2 v\ dt$ atau $S_2 = \left\lvert \int_2^5 v\ dt \right\rvert$	K1	

				Gantikan pada titik $0,2$ pada S_1 dan $2,5$ pada S_2	K1	
				$S_1 + \lvert S_2 \rvert$	K1	
				$\frac{59}{3}$ // 19.67	N1	
						10

13	(*a*)	(i)	$MO^2 = 7.2^2 + 5.4^2 - 2(7.2)(5.4)\cos 95.5^o$	K1	
			9.405	N1	
		(ii)	$\frac{\sin O}{7.2} = \frac{\sin 95.5^o}{9.405}$	K1	
			49.64	N1	
	(*b*)	(i)	 $\angle M'N'O'$ mesti sudut tirus	N1	
		(ii)	45.86	N1	
		(iii)	$\frac{1}{2}(9.405)(7.2)\sin 45.86^o$	K1	
			24.30	N1	
			$24.30 = \frac{1}{2}(t)\left[\frac{(7.2)\sin 45.86^o}{\sin 49.64^o}\right]$ @setara	K1	
			7.167	N1	
					10

14	(*a*)		$\frac{40}{x}\times 100 = 160$ atau $\frac{y}{160}\times 100 = 107.50$	K1	
			$m = 25$	N1	
			$n = 172$	N1	
	(*b*)		$\frac{(160)(40)+(108.57)(30)+(107.50)(10)+(100)(20)}{40+30+10+20}$	K1	
			127.32	N1	
	(*c*)		$\frac{P_{2022}}{150}\times 100 = 127.32$	K1	
			190.98	N1	
	(*d*)		$\frac{127.32\times 155}{100}$	K1	
			197.35	N1	
			Peratus pengeluaran menokok 97.35%	N1	
					10
15	(*a*)		$x + y \le 190$	N1	
			$x + y \ge 80$	N1	
			$y - 2x \le 20$	N1	
	(*b*)		Sekurang – kurangnya satu garis dilukis dengan betul mengikut ketaksamaan yang melibatkan x dan y	K1	
			3 garis ketaksamaan dilukis dengan betul	K1	
			Rantau dilorek dengan betul	N1	
	(*c*)	(i)	$50 \le y \le 80$	N1	
		(ii)	$400x + 380y = k$	K1	
			$400(20) + 380(60)$	K1	
			30800	N1	
					10

Graf nombor 11



Graf nombor 15