MODUL PERKEMBANGAN PEMBELAJARAN

MPP 3 TAHUN 2024 TINGKATAN 5

MATEMATIK TAMBAHAN

3472/1

Kertas 1

PERATURAN PEMARKAHAN

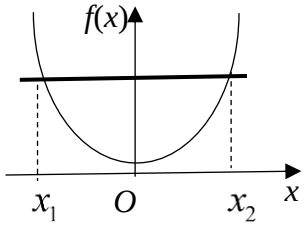
No	Skema Pemarkahan		Σ Markah
1	$q = 5$	**N1**	**2**
	$p = 8$	**N1**	
2	(*a*) $(-9q)^2 - 4(p)(9p) = 0$	**K1**	**4**
	3:2	**N1**	
	(*b*) $\alpha + 3\alpha = \frac{-(-12)}{1}$ **DAN** $\alpha(3\alpha) = \frac{(k)}{1}$	**K1**	
	27	**N1**	
	Nota: terima punca KECUALI *x* dan *k*		
3	$a - 2 = 0$ atau $3a + b = 0$	**K1**	**3**
	$3(2) + b = 0$	**K1**	
	$a = 2$ **DAN** $b = -6$	**N1**	
4	(*a*) $\frac{dy}{dx} = 2(3-2x^3)^1(-6x^2)$ atau $\frac{dy}{dx} = -12(3)x^2 + 4(6)x^5$	**K1**	**4**
	$\frac{dy}{dx} = -12x^2(3-2x^3)$	**N1**	
	(*b*) $\left(-12(1)^2(3-2(1)^3)\right) \times 0.03$	**K1**	
	$-\frac{9}{25}$ **N1**		

5	(*a*) $-10+4$	**K1**	**5**
	-6	**N1**	
	(*b*) $\int_0^2 x^2 dx + \int_0^2 g(x)\,dx$	**P1**	
	$\left[\frac{x^3}{3}\right]_0^2 + \left[\frac{x^2}{x+5}\right]_0^2$ **DAN** $\left[\left(\frac{(2)^3}{3}\right)-\left(\frac{(0)^3}{3}\right)\right]+\left[\left(\frac{(2)^2}{(2)+5}\right)-\left(\frac{(0)^2}{(0)+5}\right)\right]$	**K1**	
	$\frac{68}{21}$	**N1**	
6	(*a*) $\sqrt{(h-0)^2+(-h-0)^2}=\frac{\sqrt{128}}{2}$ atau $h^2+(-h)^2=\left(\frac{\sqrt{128}}{2}\right)^2$	**K1**	**7**
	$h=4$	**N1**	
	(*b*)(i) Guna: $m_2 \times 1 = -1$ **DAN** $y-(*-4)=*m_2\left(x-(*4)\right)$	**K1**	
	Selesaikan persamaan garis lurus *RQ dan PQ	**K1**	
	$(-3,-11)$	**N1**	
	(*b*)(ii) $y-4=\frac{11}{3}(x-(-4))$	**K1**	
	$y=\frac{11}{3}x+\frac{56}{3}$	**N1**	

7	(*a*) $\frac{y}{x} = \frac{pq}{x} + p$	**P1**	**6**
	$p = 1$	**N1**	
	$q = \frac{15}{4}$	**N1**	
	Gantikan $Y = 0$ dalam persamaan*	**K1**	
	$-\frac{4}{15}$	**N1**	
	(*b*) $y = x + \frac{15}{4}$	**N1**	
8	(*a*) $\angle BOC = 55.88°$	**P1**	**6**
	$\frac{BC}{24} = \tan^* 55.88°$	**K1**	
	$BC = 35.42$	**N1**	
	(*b*) $A_1 = \frac{1}{2}(*35.42)(24)$ @ $A_2 = \frac{1}{2}(12)^2(*0.9750)$	**K1**	
	$\frac{1}{2}(*35.42)(24) - \frac{1}{2}(12)^2(*0.9750)$ Nota: $A_1 > A_2$	**K1**	
	354.84	**N1**	

9	(*a*) $^4C_0 p^0 q^4 = \frac{1}{16}$ @ $^4C_4 p^4 q^0 = \frac{1}{16}$	**K1**	**5**
	$4\left(\frac{1}{2}\right)$	**K1**	
	2	**N1**	
	(*b*) $4\left(\frac{1}{2}\right)\left(\frac{1}{2}\right)$	**K1**	
	1	**N1**	
10	(*a*)(i) 2520	**N1**	**8**
	(*a*)(ii) $5\times4\times3\times4\times3$ @ $^4C_2\times5!$	**K1**	
	720	**N1**	
	Susunan (i) lebih selamat kerana terdapat 2520 cara yang mungkin untuk dicuba bagi mendapatkan susunan yang betul	**N1**	
	(*b*)(i) $\frac{6!}{2!2!}$	**K1**	
	180	**N1**	
	(*b*)(ii) $\frac{4!}{2!}\times\frac{3!}{2!}$	**K1**	
	36	**N1**	

11	(*a*) $9(\angle HOK) = 8.4834$	**K1**	
	$\angle HOK = 0.9426$	**N1**	
	(*b*) $15(0.9426)$ @ $21(0.9426)$	**K1**	
	$15(0.9426)$ DAN $21(0.9426)$	**K1**	
	$5 : 7$	**N1**	**8**
	(*c*) $A_1 = \frac{1}{2}(21)^2(*0.9426)$ @ $A_2 = \frac{1}{2}(15)^2(*0.9426)$ @		
	$A_3 = \frac{1}{2}(9)^2(*0.9426)$	**K1**	
	$A_4 = A_1 - A_2$ @ $A_4 = A_1 - A_2$	**K1**	
	33.93	**N1**	
12	(*a*) $\frac{6}{2}\left[2a + (6-1)d\right] = 4\left[a + (5-1)d\right]$	**K1**	
	$d = 2a$	**N1**	
	$d = 6$	**N1**	
	(*b*) $S_{10} = \left[\frac{10}{2}(2(3) + (10-1)6)\right]$	**K1**	**6**
	90×12.50	**K1**	
	RM1125. Duit tidak mencukupi sebanyak RM75 untuk membeli sebuah basikal	**N1**	

13	(*a*)(i) $\frac{2}{3+2x}=\frac{1}{3}$	**K1**	**8**
	$x=\frac{3}{2}$	**N1**	
	(*a*)(ii) $\frac{2}{3+2x}=x$ sehingga pemfaktoran	**K1**	
	$x=\frac{1}{2}$ **DAN** $x=-2$	**N1**	
	(*b*)(i) $\frac{2}{3+2f(x)}=\frac{2}{2x^2+3}$	**K1**	
	$f(x)=x^2$	**N1**	
	(*b*)(ii) $x=\pm\sqrt{y}$ @ Ujian garis mengufuk	**K1**	
			
	Bukan hubungan satu kepada satu	**N1**	

14	(*a*) $\log_5 4+\log_5 3+\log_5 3$ @ setara	**K1**	
	$\log_5 36 = k+2j$	**N1**	
	(*b*) Guna hukum kuasa	**K1**	
	[panduan : 3^{2a} DAN $3^{\frac{1}{2}b}$ @ $9^{\frac{1}{2}c}$ DAN $9^{\frac{1}{2}\left(\frac{1}{2}\right)^b}$]		
	$1:4:2$	**N1**	
	(*c*) Guna hukum tukar asas	**K1**	**8**
	Guna hukum darab @ bahagi	**K1**	
	Panduan: [$\log_3 \frac{x}{y}=1$ @ $\log_2 (4y+2)\left(\frac{1}{2x}\right)=2$]		
	Tukar bentuk log kepada bentuk indeks	**K1**	
	$x=\frac{3}{10}$ **DAN** $y=\frac{1}{10}$	**N1**	

15 (*a*)

x	– 4	–3	–2	–1	0	1	2	3	4
$y=\sqrt{16-x^2}$	0	2.65	3.46	3.87	4	3.87	3.46	2.65	0
$y=-\sqrt{16-x^2}$		–2.65	–3.46	–3.87	–4	–3.87	–3.46	–2.65	
$y=\frac{x}{2}$	–2	–1.50	–1	–0.50	0	0.50	1.00	1.50	2

Semua nilai betul dalam jadual **N2**

Nota :Satu kesilapan berulang dalam jadual (**N1)**

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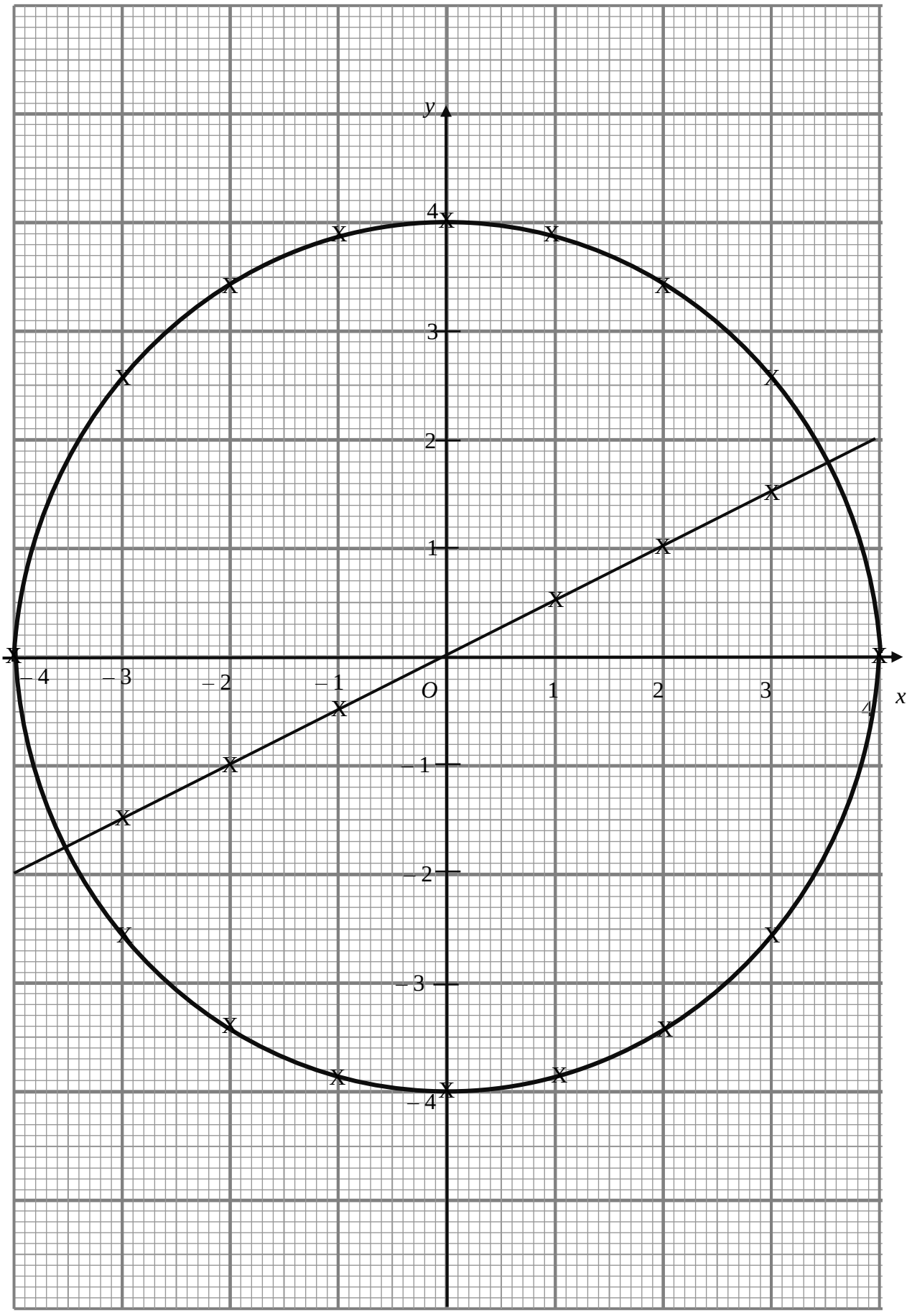
(*b*) Skala,paksi betul dan satu titik di plot dengan betul **K1**
Semua nilai diplot betul **N1N1**

Graf yang licin dan sempurna(bulatan) **N1**
Graf yang licin dan sempurna(garis) **N1**

(*c*) y = 1.78, –1.78 **N1**


y
x
O
4
3
2
1
−1
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−3
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−4
−3
−2
−1
1
2
3
4