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**	
	$3:2$	**N1**	
	(b) $\alpha + 3\alpha = \frac{-(-12)}{1}$ **DAN** $\alpha(3\alpha) = \frac{(k)}{1}$	**K1**	**4**
	27	**N1**	
	Nota: terima punca KECUALI x dan k		
3	$a - 2 = 0$ atau $3a + b = 0$	**K1**	
	$3(2) + b = 0$	**K1**	**3**
	$a = 2$ **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**	
	$\frac{dy}{dx} = -12x^2(3-2x^3)$	**N1**	**4**
	(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	$(a)\quad \frac{y}{x}=\frac{pq}{x}+p$	**P1**	**6**
	$p=1$	**N1**	
	$q=\frac{15}{4}$	**N1**	
	Gantikan $Y=0$ dalam persamaan*	**K1**	
	$-\frac{4}{15}$	**N1**	
	$(b)\quad y=x+\frac{15}{4}$	**N1**	
8	$(a)\quad \angle BOC=55.88°$	**P1**	**6**
	$\frac{BC}{24}=\tan*55.88°$	**K1**	
	$BC=35.42$	**N1**	
	$(b)\quad A_1=\frac{1}{2}(*35.42)(24)\ @\ A_2=\frac{1}{2}(12)^2(*0.9750)$	**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*) $^4C_0p^0q^4=\frac{1}{16}$ @ $^4C_4p^4q^0=\frac{1}{16}$	**K1**	
	$4\left(\frac{1}{2}\right)$	**K1**	
	2	**N1**	**5**
	(*b*) $4\left(\frac{1}{2}\right)\left(\frac{1}{2}\right)$	**K1**	
	1	**N1**	
10	(*a*)(i) 2520	**N1**	
	(*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**	**8**
	(*b*)(i) $\frac{6!}{2!2!}$	**K1**	
	180	**N1**	
	(*b*)(ii) $\frac{4!}{2!}\times\frac{3!}{2!}$	**K1**	
	36	**N1**	

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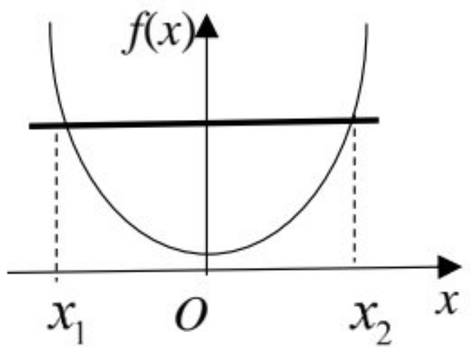
11	(a) $9(\angle HOK) = 8.4834$	**K1**	
	$\angle HOK = 0.9426$	**N1**	
	(b) $15(0.9426)$ @ $21(0.9426)$	**K1**	
	$15(0.9426)$ DAN $21(0.9426)$	**K1**	
	$5 : 7$	**N1**	**8**
	(c) $A_1 = \frac{1}{2}(21)^2(*0.9426)$ @ $A_2 = \frac{1}{2}(15)^2(*0.9426)$ @		
	$A_3 = \frac{1}{2}(9)^2(*0.9426)$	**K1**	
	$A_4 = A_1 - A_2$ @ $A_4 = A_1 - A_2$	**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) $\dfrac{2}{3+2x}=\dfrac{1}{3}$	**K1**	
	$x=\dfrac{3}{2}$	**N1**	
	(a)(ii) $\dfrac{2}{3+2x}=x$ sehingga pemfaktoran	**K1**	
	$x=\dfrac{1}{2}$ **DAN** $x=-2$	**N1**	
	(b)(i) $\dfrac{2}{3+2f(x)}=\dfrac{2}{2x^2+3}$	**K1**	**8**
	$f(x)=x^2$	**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**)

8

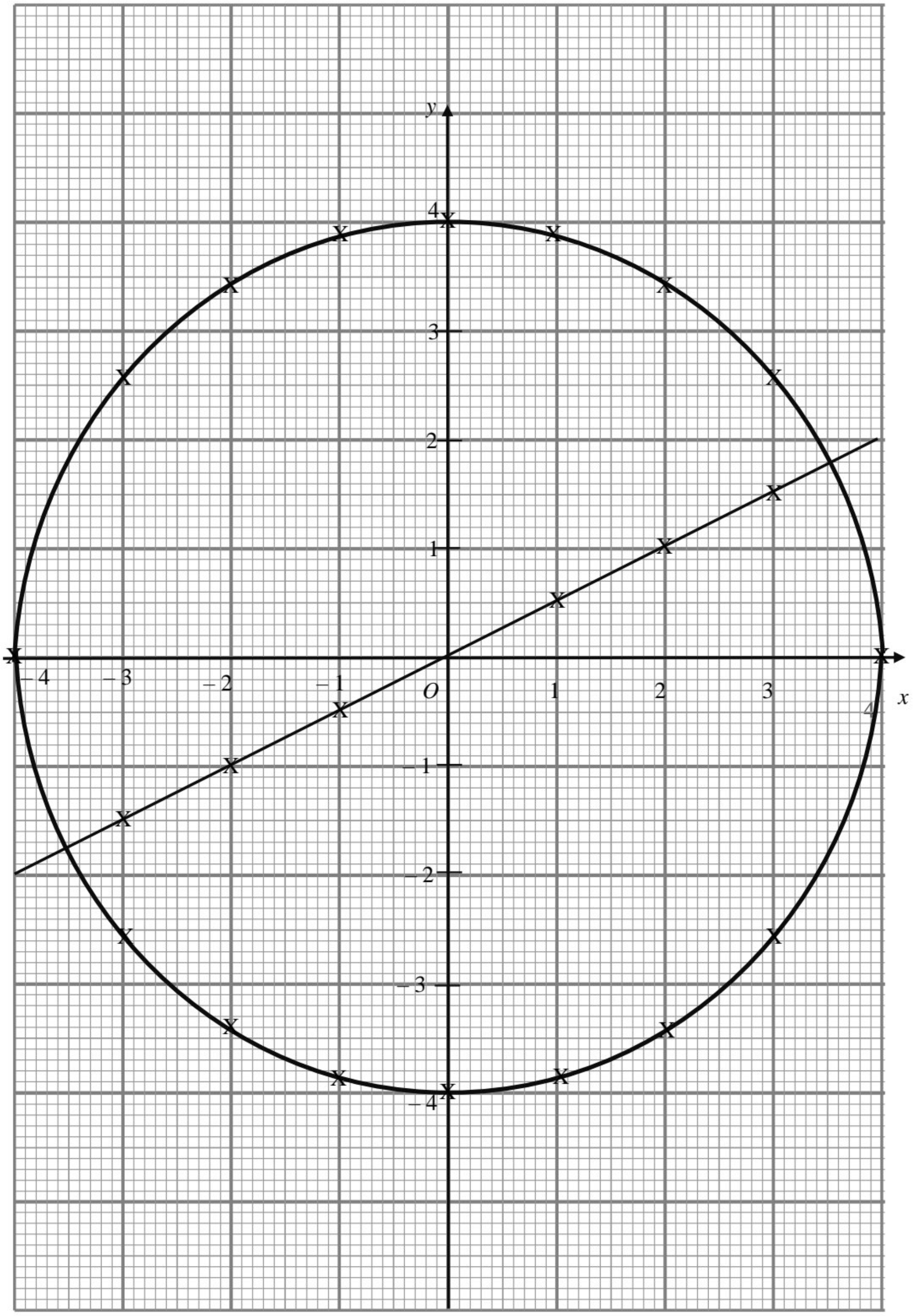
(*b*) Skala,paksi betul dan satu titik di plot dengan betul **K1**

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