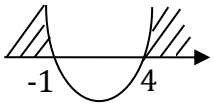
PERATURAN PEMARKAHAN
PROGRAM PENINGKATAN PRESTASI AKADEMIK
PERCUBAAN SIJIL PELAJARAN MALAYSIA 2019

MATEMATIK TAMBAHAN KERTAS 1 (SET 2)

No	Solution and Marks Scheme	Sub Marks	Total Marks
1.	630 1x ${}^{9}C_{1} \times {}^{8}C_{4}$	2 B1	2
2.	(a) { 5 berlian, 5 mutiara} (b) A function	1 1	2
3.	13 $\sqrt{(4-(-8))^2+(7-2)^2}$	2 B1	2
4.	(a) 9 (b) $x=2$, $x=\frac{1}{2}$ $4x-5=\pm 3$	1 2 B1	3
5.	20 $x^2+4x-480=0$ $\frac{60}{x+4}=\frac{60}{x}-\frac{1}{2}$ *or* $\frac{60}{x+4}=\frac{60}{x}-0.5$	3 B2 B1	3
6.	a) $3x^2+8x-3=0$ $(3x-1)(x+3)=0$ or equivalent b) $m\le -1, m\ge 4$ $(m-4)(m+1)\ge 0$ or 	2 B1 2 B1	4
7.	(a) $(x+\frac{3}{2})^2-\frac{25}{4}$ $(x+\frac{3}{2})^2$ (b) (i) $x=-\frac{3}{2}$ (ii) $\left(-\frac{3}{2},-\frac{25}{4}\right)$	2 B1 1 1	4

No	Solution and Marks Scheme	Sub Marks	Total Marks
8.	$a = -\frac{3}{25}$ and $p = 3$ and $q = 3$	3	3
	$0 = 25a + 3$	B2	
	$f(x) = a(x-3)^2 + 3$	B1	
9.	$n = 9$	4	4
	$n > \frac{\log_{10}\frac{1}{3}}{\log_{10}\frac{7}{8}}$	B3	
	$\left(\frac{7}{8}\right)^n < \frac{1}{3}$	B2	
	$60000\left(\frac{7}{8}\right)^n < 20000$	B1	
10.	$x = -2$	3	3
	$\frac{3}{2}x + 6 = -3x - 3$ or $3x + 12 = -6x - 6$	B2	
	$2^{\frac{3}{2}x+6} = \frac{1}{2^{3x+3}}$ or $2^{3x+12} = 2^{-6x-6}$	B1	
11.	(a) 8	2	4
	$(m+4)-(m-3) = (2m+3)-(m+4)$	B1	
	(b) 36	2	
	$S_3 = \frac{3}{2}[2(5)+2(7)]$	B1	
	or $S_3 = 5+12+19$		
12.	$a = 48$ and $r = \frac{1}{3}$	4	4
	$a = 48$ or $r = \frac{1}{3}$	B3	
	$r(r-1) = -\frac{2}{9}$	B2	
	$ar^3 - ar = -\frac{128}{9}$ or $a + ar = 64$	B1	
13.	p =18 and q = -3	3	3
	p =18 or q = -3	B2	
	$m = \frac{12-3}{2-5}$ or - 3	B1	

No	Solution and Marks Scheme	Sub Marks	Total Marks
14.	(a) $\frac{3}{4}\pi\ rad$ (b) 43.57 cm $10\left(\frac{3}{4}\times 3.142\right)$ or equivalent	1 2 B1	3
15.	(a) $-\frac{12}{13}$ (b) $\frac{56}{65}$ $\left(\frac{5}{13}\right)\left(\frac{4}{5}\right)$ *or* $\left(-\frac{12}{13}\right)\left(\frac{3}{5}\right)$	1 2 B1	3
16.	p = -13 and 19 18- 6p = 96 or 18 –6p = -96 $\frac{1}{2}\lvert 1(8)+4(6)+p(2)-2(4)-8(p)-(6)(1)\rvert = 48$ or 120 000 ÷ 2500 or 48	3 B2 B1	3
17.	h = 2 and k = -1 h = 2 or k = -1 6 = 2h – 2k or 5 = 3h + k -3***i*** +3***j*** or 9***i*** + 2***j*** or 6***i*** + 5***j***	4 B3 B2 B1	4
18.	(a) 4***i*** + 6***j*** or $\begin{pmatrix}4\\6\end{pmatrix}$ (b) (1, 17) $\overrightarrow{OP} = \overrightarrow{OA}+\overrightarrow{AP}$ or ***i*** + 17***j***	1 2 B1	3
19.	-1 $-\frac{4}{r^2}$ $4\pi r^2$ or $r = 2$	3 B2 B1	3
20.	0 $x(24x)-2(12x^2-5)-10$ $12x^2-5$ *or* $24x$	3 B2 B1	3

No	Solution and Marks Scheme	Sub Marks	Total Marks
21.	(a) -18	1	3
	(b) 6	2	
	$[4x]_2^5$ *or* 6	B1	
22.	5 and 6	3	3
	$\frac{3^2+r^2+8^2}{3}-(\frac{11+r}{3})^2=\frac{38}{9}$	B2	
	$\frac{11+r}{3}$ *or* $\frac{3^2+r^2+8^2}{3}$	B1	
23.	10.78	4	4
	$9.5+\left(\frac{7.5-6}{7}\right)6$	B3	
	$16.59=15.5+\left(\frac{15-(6+q)}{m}\right)6$ or $q = 9 - 0.1817m$	B2	
	$L=15.5$ or $6+q$	B1	
24.	$\frac{7}{32}$	4	4
	16	B3	
	$\frac{s}{s+4}=\frac{4}{5}$ or $\frac{4}{s+4}=\frac{1}{5}$	B2	
	$\frac{s}{s+4}$ or $\frac{4}{s+4}$	B1	
25.	25.23%	3	3
	$P\left(Z>\frac{185-175}{15}\right)=0.2523$	B2	
	$P\left(Z>\frac{185-175}{15}\right)$	B1	