

3472/1

Matematik  
Tambahan  
Kertas 1  
2 jam  
Ogos 2011



**BAHAGIAN PENGURUSAN  
SEKOLAH BERASRAMA PENUH DAN SEKOLAH KECEMERLANGAN  
KEMENTERIAN PELAJARAN MALAYSIA**

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**PEPERIKSAAN PERCUBAAN  
SIJIL PELAJARAN MALAYSIA 2011**

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**ADDITIONAL MATHEMATICS**

**Paper 1**

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**MARKING SCHEME**

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Skema Pemarkahan ini mengandungi **6** halaman bercetak

PERATURAN PEMARKAHAN- KERTAS 1

No.	Solution and Mark Scheme	Sub Marks	Total Marks
1(a)	$-\frac{3}{2}$	2	3
(b)	B1: $\frac{m+3}{m} = -1$ $-\frac{1}{2}$	1	
2(a)	$\frac{x+3}{2}$	1	3
(b)	$\frac{5}{2}$ B1: $k(3) = 2$	2	
3	a = 6 and b = -11  B2: a = 6 or b = -11  B1: $fg^{-1}(x) = a\left(\frac{x+5}{2}\right) + b$	3	3
4	$x \leq -5, x \geq \frac{1}{2}$ B2: $(2x-1)(x+5) \geq 0$ or B1: $2x^2 + 9x - 5 \geq 0$	3	3
5	$-1 < p < 11$ B2: $(p+1)(p-11) < 0$ B1: $(-p-1)^2 - 4(3)(p+1) < 0$	3	3
6(a)	$m = 1$	1	3
(b)	$x = 1$	1	
(c)	$(1, -3)$	1	

7	$x = \frac{2}{5}$ <p>B2: <math>2(x+2)\frac{1}{2} = -4(x-1)</math> or <math>x+2 = -4x+4</math></p> <p>B1: <math>5^{2(x+2)\frac{1}{2}} = \frac{1}{5^{4(x-1)}}</math></p>	3	3
8	$x = \frac{1}{3}$ <p>B3: <math>3x^3 = 9^{-2}</math></p> <p>B2: <math>\log_9 x^2(3x) = -2</math></p> <p>B1: <math>\frac{\log_9 3x}{\log_9 81}</math> (for change base)</p>	4	4
9(a)	$h = 1$ <p>B1: <math>5h - 1 - (2h - 4) = 6h + 4 - (5h - 1)</math></p>	2	4
(b)	<p>1460</p> <p>B1: <math>s_{20} = \frac{20}{2}[2(16) + 19(6)]</math></p> <p><b>OR</b> <math>s_{23} - s_3 = \frac{23}{2}[2(-2) + 22(6)] - \frac{3}{2}[2(-2) + 2(6)]</math></p> <p><b>OR</b> <math>s_{20} = \frac{20}{2}[16 + 130]</math></p>	2	
10	$r = -\frac{1}{3} \text{ and } a = 4$ <p>B3: <math>r = -\frac{1}{3}</math> or <math>a = 4</math></p> <p>B2: <math>3(1+r)(1-r) = \frac{8}{3}</math></p> <p>B1: <math>\frac{a}{1-r} = 3</math> or <math>a + ar = \frac{8}{3}</math></p>	4	4
11	<p>42300</p> <p>B2: <math>S_{36} = \frac{36}{2}[2(300) + 35(50)]</math></p> <p>B1: <math>S_{36}</math> or <math>a = 300</math> or <math>300, 350, 400</math></p>	3	3

12	$q = \frac{2}{3}$ and $p = -4$ B2: $q = \frac{2}{3}$ or $p = -4$ B1: $xy = \frac{1}{q}x^2 + \frac{p}{q}$ or $\frac{3-0}{6-4} = \frac{3}{2}$	3	3
13(a)	$t = 1$ B1: $\frac{2t-0}{0-8} = -\frac{1}{4}$	2	4
(b)	$y = 4x + 2$ B1: Using $m_1 \cdot m_2 = -1$ and $m_2 = 4$	2	
14	$m = 1$ and $n = 3$ B2: $\frac{m}{n} = \frac{1}{3}$ B1: $\frac{n(-4) + m(4)}{n+m} = -2$ or $\frac{n(2) + m(6)}{n+m} = 3$	3	3
15(a)	$-3\underline{x} + 6\underline{y}$	1	3
(b)	$2\underline{x} + 2\underline{y}$ B1: $\frac{2}{3}(3\underline{x} - 6\underline{y})$ or $\frac{1}{3}(6\underline{y} - 3\underline{x})$ or equivalent	2	
16(a)	$8\underline{i} + 4\underline{j}$	1	3
(b)	$\frac{1}{\sqrt{80}}(8\underline{i} + 4\underline{j})$ or $\frac{1}{\sqrt{5}}(2\underline{i} + \underline{j})$ B1: $ \overrightarrow{AB}  = \sqrt{8^2 + 4^2} = \sqrt{80}$	2	

17(a)	$r = k = 10$  B1: $\frac{1}{2}r^2(0.8) = 40$	2	4
(b)	72 cm  B1: $S_{AB} = 10(0.8)$ or $S_{CD} = 30(0.8)$	2	
18	$-\frac{33}{65}$  B1 : $\sin B = -\frac{3}{5}$ OR $\cos A = \frac{5}{13}$	2	2
19	$-\frac{13}{2}$  B2 : $\left[\frac{x^2}{2}\right]_2^1 + (-5)$  B1 : $\int_2^1 x dx + \int_2^1 f(x) dx$ OR $\frac{x^2}{2}$ OR $\int_2^1 f(x) dx = -5$	3	3
20	27  B2 : $(-1)^2(9(-1)^2)((-1)^3 + 4)^2 + ((-1)^3 + 4)^3(2(-1))$  B1 : $x^2(9x^2)(x^3 + 4)^2 + (x^3 + 4)^3(2x)$ or equivalent	3	3
21(a)	5  B1 : $450 - 90h = 0$	2	3
(b)	1125	1	

22(a)	$p = 9$	1	3
(b)	8 B1 : $\sigma^2 = \frac{3^2 + 7^2 + 9^2 + 5^2 + 1^2}{5} - (5)^2$	2	
23(a)	20	1	3
(b)	240 B1 : $5! \times 2!$	2	
24(a)	$\frac{1}{2}$	1	3
(b)	$\frac{5}{12}$ B1 : $\frac{1}{4} \times \frac{2}{3} + \frac{3}{4} \times \frac{1}{3}$	2	
25(a)	0.1515	1	4
(b)	58.09 B2 : $1.03 = \frac{k - 55}{3}$ B1 : $z = 1.03$	3	