

SULIT
3472/1 (PP)
Additional
Mathematics
Kertas 1
Peraturan
Pemarkahan
Mei 2010

3472/1(PP)



JABATAN PELAJARAN NEGERI TERENGGANU

PEPERIKSAAN PERTENGAHAN TAHUN 2010
TINGKATAN 4
ADDITIONAL MATHEMATICS

Kertas 1
Mei 2010
2 jam

3472/1

ADDITIONAL MATHEMATICS
KERTAS 1
PERATURAN PEMARKAHAN

Peraturan pemarkahan ini mengandungi 7 halaman bercetak.

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[Lihat sebelah
SULIT

INSTRUCTIONS FOR EXAMINERS**1. MARKING GUIDE**

- 1.1 Mark all the answers.
- 1.2 Do not mark working / answer that has been cancelled.
- 1.3 Answer written in the answer space or at the end of the working is considered the final answer.
- 1.4 Full mark is given for the correct answer without referring to the working.
- 1.5 If the final answer is wrong, award the corresponding maximum mark as stated in the marking scheme.
- 1.6 If more than one final answer is given, choose the answer with the highest mark unless stated otherwise in the marking scheme.
- 1.7 If the final answer is correct, but stated wrongly in the answer space, full mark is not awarded.

2. NOTATION

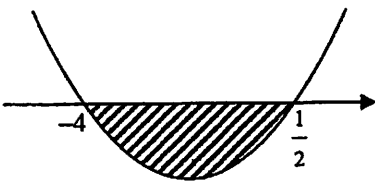
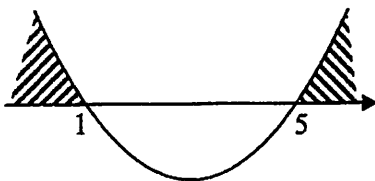
- 2.1 Full mark for each question in this paper is either 2, 3 or 4.
 - 2.2 If full mark is not awarded, the following system is used :
 - B3 – 3 marks is awarded if the answer at this stage is correct.
 - B2 – 2 marks is awarded if the answer at this stage is correct.
 - B1 – 1 mark is awarded if the answer at this stage is correct.
 - 2.3 Only one out of B3, B2 or B1 is awarded for each question or part of a question.
3. Accept answers correct to 4 significant figures unless stated otherwise in the marking scheme.
 4. Accept other correct methods which are not given in the marking scheme.
 5. Accept answers in Bahasa Melayu.
 6. Calculating total marks.

$$\frac{\sum \text{Score for Paper 1} + \sum \text{Score for Paper 2}}{160} \times 100\%$$

MID YEAR EXAMINATION FORM 4 (2010)
MARK SCHEME FOR ADDITIONAL MATHS. PAPER 1

No.	Mark Scheme	Σ Marks
1	(a) 8, 9 (1) (b) 3 (1)	2
2	(a) {3, 8} (1) (b) many to one (1)	2
3	(a) $f^{-1}(x) = \frac{x-5}{2}$ (2) $2x = y - 5$ or $2y = x - 5$ or $x = \frac{y-5}{2}$ B1 (b) -5 (2) $2p + 5 = p$ B1	4
4	(a) 2 (2) $\frac{x+3}{4}$ or $\frac{y+3}{4}$ OR $4x - 3 = 5$ B1 (b) -3 (2) $2^2 + 2 - 9$ B1 (follow thro' for B1 only)	4
5	$k = \frac{1}{2}, p = 8$ (both) (3) Compare : $k = \frac{1}{2}$ or $\frac{p}{2} = 4$ or $\frac{1}{k} = 2$ or $\frac{4}{k} = p$ B2 $\frac{x}{2} + \frac{p}{2} = kx + 4$ or $\frac{x}{k} - \frac{4}{k} = 2x - p$ $\frac{x+p}{2}$ or $\frac{x-4}{k}$ B1	3

No.	Mark Scheme	Σ Marks
6	<p>(a) $g(x) = \frac{2}{x}, x \neq 0$ (2)</p> <p>$\frac{8}{g(x)} = 4x$ B1</p> <p>(b) $x = 28$ (2)</p> <p>$\frac{2}{\left(\frac{8}{x}\right)}$ or $2\left(\frac{x}{8}\right)$ or $\frac{2}{f(x)} = 7$ B1</p>	4
7	<p>$2x^2 + 4x - 9 = 0$ (2)</p> <p>$2x^2 + 4x - 9$ or $2x^2 + 5x - 3 = x + 6$ B1</p>	2
8	<p>$\frac{5}{6}, -1$ (3)</p> <p>$(6x - 5)(x + 1) = 0$ B2</p> <p>$6x^2 + x - 5 = 0$ B1</p>	3
9	<p>$x^2 + 2x - 15 = 0$ (2)</p> <p>$(x - 3)(x + 5) = 0$ or $x^2 - (3 - 5)x + (3)(-5) = 0$ or SOR = -2 and POR = -15 B1</p>	2
10	<p>$p < -\frac{17}{8}$ (3)</p> <p>$(-3)^2 - 4(p + 1)(-2) < 0$ B2</p> <p>$(p + 1)x^2 - 3x - 2 = 0$ or $a = p + 1, b = -3, c = -2$ B1</p>	3
11	<p>$x^2 - 4x - 12 = 0$ (4)</p> <p>4 and -12 B3</p> <p>4 or -12 B2</p> <p>$m + n = 2$ and $mn = -3$ B1</p>	4

No.	Mark Scheme	Σ Marks
12	$-4 < x < \frac{1}{2}$ <p>(3) (Accept $\frac{1}{2} > x > -4$)</p>  <p style="text-align: right;">B2</p> <p>$-4, \frac{1}{2}$ (both seen anywhere) B1</p>	3
13	$m < 1, m > 5$ <p>(4) Give B3 for other than m.</p>  <p style="text-align: right;">B3</p> <p>$(m-1)(m-5) > 0$ B2</p> <p>$(3-m)^2 - 4(1)(1) > 0$ B1</p>	4
14	<p>(a) $k = -2,$ (1)</p> <p style="padding-left: 2em;">$p = -1$ (1)</p> <p>(b) $x = 2$ (1)</p>	3
15	<p>$k = 4, -6$ 3</p> <p>$\frac{1}{2}(4k+4) = 10$ and $\frac{1}{2}(4k+4) = -10$ B2</p> <p>$\frac{1}{2} [1(-2) + 5(k) + 4(2)] - [5(2) + 4(-2) + 1(k)]$ or equivalent B1</p>	3

No.	Mark Scheme	Σ Marks
16	<p>(a) $K(6, 0), L(0, 4)$ both (1)</p> <p>(b) $2y = 3x - 18$ or equivalent (3)</p> <p>$y - 0 = \frac{3}{2}(x - 6)$ or $0 = \frac{3}{2}(6) + c$ B2</p> <p>$-\frac{2}{3}$ or $\frac{3}{2}$ B1</p>	4
17	<p>(a) $y = \frac{3}{2}x - \frac{5}{2}$ (1)</p> <p>(b) $2y = 3x + 3$ or equivalent (2)</p> <p>$y - 3 = \frac{3}{2}(x - 1)$ or $3 = \frac{3}{2}(1) + c$ B1</p>	3
18	<p>(a) $\frac{x}{4} + \frac{y}{2} = 1$ (1)</p> <p>(b) $3x^2 + 3y^2 - 32x + 4y + 60 = 0$ (3)</p> <p>$2\sqrt{(x-4)^2 + (y-0)^2} = \sqrt{(x-0)^2 + (y-2)^2}$ B2</p> <p>$\sqrt{(x-4)^2 + (y-0)^2}$ or $\sqrt{(x-0)^2 + (y-2)^2}$ B1</p>	4
19	<p>2^{5n+1} (3)</p> <p>$2^{2n-2+4n-(n-3)}$ B2</p> <p>$2^{2(n-1)} \times 2^{4n} + 2^{n-3}$ B1</p>	3
20	<p>$p = 5$ (3)</p> <p>$3 + 2p + 1 = 2(2p - 3)$ B2</p> <p>$3^3(3^{2p+1}) = 3^{2(2p-3)}$ B1</p>	3

No.	Mark Scheme	Σ Marks
21	$p = 3$ (4) $2^p = 8$ B3 $2^p(2^2 - 1) = 24$ B2 $2^p \times 2^2$ B1	4
22	$k = 2$ (2) $k^5 = 32$ B1	2
23	$x = -\frac{2}{3}$ (3) $\frac{4x-8}{2x} = 2^3$ B2 $\log_2\left(\frac{4x-8}{2x}\right)$ B1 Use law of logarithm	3
24	$y = 3$ (4) $3y - 5 = 4$ B3 $\log_3(3y - 5) = \log_3 2^2$ B2 $\frac{\log_3(3y - 5)}{\log_3 9}$ B1	4
25	$\frac{3}{2} + \frac{n}{2} - m$ (4) $\frac{3 \log_3 3}{2} + \frac{\log_3 y}{2} - \frac{2 \log_3 x}{2}$ B3 $\frac{\log_3 3^3}{\log_3 9} + \frac{\log_3 y}{\log_3 9} - \frac{\log_3 x^2}{\log_3 9}$ B2 $\log_9 27 + \log_9 y - \log_9 x^2$ B1	4

END OF MARK SCHEME