

SULIT 3472/1

3472/1  
 MATEMATIK TAMBAHAN  
 KERTAS 1  
 OGOS 2013  
 2 Jam

PEPERIKSAAN PRASPM  
 SEKOLAH-SEKOLAH MENENGAH 2013

MATEMATIK TAMBAHAN / ADDITIONAL MATHEMATICS  
 KERTAS 1 / PAPER 1  
 SKEMA PERMARKAHAN / MARKING SCHEME

21.	(a) -6 (b) 12 B2: $\left[\frac{x^2}{2}\right]_1^{-3}$ B1: $\int_1^{-3} 2x dx - \int_1^{-3} f(x) dx$	1 3	4
22.	(a) 40320 (b) 4320 B1: 3! or 6! or equivalent	1 2	3
23	(a) $\frac{9}{35}$ B1: $\frac{3}{5} \times \frac{3}{7}$ (b) $\frac{18}{35}$ B1: $\left(\frac{2}{5} \times \frac{3}{7}\right) + \left(\frac{3}{5} \times \frac{4}{7}\right)$	2 2	4
24	$u = \frac{24-k}{3}$ B2: $k = 24 - 3u$ B1: $\frac{120}{5} - (\sqrt{3u})^2$	3	3
25	(a) 1.267 B1: $\frac{63.2-48}{12}$ (b) $k = -0.39$ B1: 0.39	2 2	4

8.	$x=1$ B2: $\frac{x+8}{x}=9$ or $x+8=9x$ or equivalent B1: $\log_3 \frac{x+8}{x}=2$ or $\log_3 \frac{x+8}{x}=\log_3 3^2$	3	3
9.	17 or 17 terms or $n=17$ B1: $-13+(n-1)(5)=67$ or by listing method: (Just list all the terms and correct) -13, -8, -3, 2, 7, 12, 17, 22, 27, 32, 37, 42, 47, 52, 57, 62, 67	2	2
10.	$a=\frac{32}{27}$ , $r=\frac{3}{2}$ or equivalent (Both correct) B2: $ar^3=4$ and $ar^6=\frac{27}{2}$ (Both) B1: $ar^3=4$ or $ar^6=13\frac{1}{2}$	3	3
11.	$h=41$ , $k=11$ B2: $S_n=\frac{0.72}{1-0.01} \frac{or}{or} S_n=3+\frac{72}{99} \frac{or}{or} S_n=3+\frac{8}{11} \frac{or}{or} S_n=\frac{41}{11}$ B1: $r=0.01$ or $\frac{72}{99}$ or $\frac{8}{11}$	3	3
12.	$h=100$ , $k=7$ (Both) B3: $h=100$ or $k=7$ B2: $\log_{10} h=2$ or $k=\frac{1}{2}(10)+3$ or $\frac{k-2}{10-0}=\frac{1}{2}$ B1: $\log_{10} y=\frac{1}{2}\log_{10} x+\log_{10} h$ accept $Y=\frac{1}{2}X+2$	4	4
13.	(a) $\frac{x}{5}+\frac{y}{-6}=1$ or equivalent (b) $10x+12y+11=0$ B2: $x^2-10x+25+y^2=x^2+y^2+12y+36$ or equivalent B1: $x^2-10x+25+y^2$ or $x^2+y^2+12y+36$	1 3	4
14.	41, 81°, 138, 19° or 41°, 49°, 138°, 11° B3: $\sin x=\frac{2}{3}$ , $\sin x=-4$ (both) B2: $(3 \sin x - 2)(\sin x + 4) = 0$ B1: $3(1 - \sin^2 x) - 18 \sin x + 4 = 0$	4	4

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ANY ORDER PLEASE CONTACT:

16.	(a) $\frac{1}{k}$ (b) $\sqrt{1-k^2}$ B1: $\cos 180^\circ \cos x + \sin 180^\circ \sin x$ or $-\cos x$	1 2	3
17.	(a) $-5i+4j$ , Accept $\begin{pmatrix} -5 \\ 4 \end{pmatrix}$ B1: $-4i+3j-i+j$ or equivalent (b) $\sqrt{41}$ or 6.403	2	3
17.	(a) $\overline{AC}=6a-4b$ (b) $\overline{BD}=-\frac{9}{2}a-b$ B2: $-6a+\frac{1}{4}(6a-4b)$ or $-4b+\frac{3}{4}(-6a+4b)$ B1: $\frac{1}{4}(6a-4b)$ or $\frac{3}{4}(-6a+4b)$	1 3	4
18.	(a) $\frac{4}{3}$ or $1\frac{1}{3}$ accept 1.333 (b) 30 B1: $\frac{1}{2}(6)^2\left(\frac{4}{3}\right)$ or $\frac{1}{2}(6)^2\left(\frac{4}{3}\right)$	1 2	3
19.	$\frac{9}{2}(6x+1)^2$ B2: $\frac{dy}{dx}=\frac{3}{4}u^2 \times 6$ or $\frac{dy}{dx}=\frac{1}{4}(3)(6x+1)^2(6)$ B1: $\frac{dy}{du}=\frac{3}{4}u^2$ or $\frac{du}{dx}=6$	3	3
20.	$p=\frac{-2}{3}$ B2: $6p(-1)^2-12(-1)=8$ or equivalent B1: $\frac{dy}{dx}=6px^2-12x$ or $\frac{dy}{dx}=8$	3	3

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3472/2  
**MATEMATIK  
 TAMBAHAN**  
 Kertas 2  
 Ogos  
 2  $\frac{1}{2}$  jam.

**PEPERIKSAAN PRASPM  
 SEKOLAH-SEKOLAH MENENGAH 2013**

**MATEMATIK TAMBAHAN**  
 Kertas 2

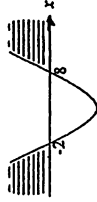
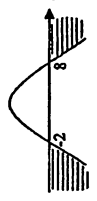
Dua jam tiga puluh minit

**JANGAN BUKA KERTAS SOALAN INI SEHINGGA DIBERTAHU**

1. Kertas soalan ini adalah dalam dwibahasa.
2. Soalan dalam bahasa Melayu mendahului soalan yang sepadan dalam bahasa Inggeris.
3. Calon dikehendaki membaca maklumat di halaman belakang kertas soalan ini.
4. Calon dikehendaki meneceraihan halaman 20 dan ikat sebagai muka hadapan bersama-sama dengan jawapan anda..

Kertas soalan ini mengandungi 21 halaman bercetak.

[Lihat halaman sebelah

No.	Suggested solution and marking scheme	Sub Marks	Total Marks
1.	(a) 3 (b) 4 (c) many to many relation ( <i>hubungan banyak kepada banyak</i> ), $m - m, m \rightarrow m$ .	1 1 1	3
2.	(a) 6 (b) $k = \frac{2}{3}$ B1: $k(6) + 3 = 7$ <u>or</u> $6k = 4$	1 2	3
3.	$f/g^{-1} = 12x + 13$ B2: $6(2x + 3) - 5$ B1: $g^{-1} = 2x + 3$	3	3
4.	$p = \frac{3}{2}$ B2: $SOR = \alpha + 3\alpha = 2$ and $POR = \alpha(3\alpha) = \frac{p}{2}$ (Both) <u>or</u> equivalent. B1: $SOR = \alpha + 3\alpha = 2$ <u>or</u> $POR = \alpha(3\alpha) = \frac{p}{2}$	3	3
5.	$x \leq -2, x \geq 8$ B2:  <u>or</u>  B1: $(x+2)(x-8) \geq 0$ <u>or</u> $(-x-2)(x-8) \leq 0$	3	3
6.	(a) $k = -8$ (b) $a = 2$ (c) $x = 1$	1 1 1	3
7.	$x = -\frac{3}{2}$ <u>or</u> $x = -1.5$ B2: $3^{4x+2} = 3^{-1}$ <u>or</u> equivalent. B1: Seen $3^{4x+2}$ <u>or</u> $3^{3x}$ <u>or</u> $3^{-4}$ <u>or</u> equivalent. <u>OR</u> using logarithms method: $x = -1.5$ (accept $-1.499 \rightarrow 1.501$ ) B2: $(x+2)0.4771 + x(0.4771) = -1.908$ <u>or</u> $1.9081x = -2.8622$ B1: $\log_{10} 3^{x+2} + \log_{10} 27^x = \log_{10} (\frac{1}{27})$ ( accept any base)	3	3

SULIT

23

3472/1

For  
Examiner's  
Use

24 The mean of five numbers is  $\sqrt{3u}$  and the sum of the squares of the numbers is 120. Given the variance is  $k$ , express  $u$  in terms of  $k$ .

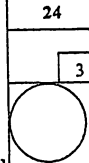
*Min bagi lima nombor ialah  $\sqrt{3u}$  dan hasil tambah bagi kuasa dua nombor-nombor itu ialah 120. Diberi varians ialah  $k$ , ungkapkan  $u$  dalam sebutan  $k$ .*

[3 marks]  
[3 markah]

Answer / Jawapan :

(a)

(b)



[Lihat sebelah]

SULIT

24

3472/1

For  
Examiner's  
Use

25  $X$  is a continuous random variable which is normally distributed with a mean of 48 and a variance of 144. Find

*$X$  ialah pembolehubah rawak selanjar bertaburan secara normal dengan min 48 dan varians 144. Cari*

(a) the value of the  $z$ -score when  $X$  is 63.2.  
*nilai skor- $z$  apabila  $X$  ialah 63.2.*

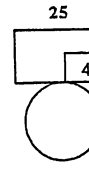
(b) the value of  $k$  when  $P(z < k) = 0.3483$ .  
*nilai  $k$  apabila  $P(z < k) = 0.3483$ .*

[4 marks]  
[4 markah]

Answer / Jawapan :

(a)

(b)



END OF QUESTION PAPER  
KERTAS SOALAN TAMAT

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