

NAMA : \_\_\_\_\_

TINGKATAN : \_\_\_\_\_

**SMK DATUK HAJI ABDUL KADIR  
SEBERANG PERAI UTARA PULAU PINANG**

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**PERCUBAAN SPM 2017**

**3472/1**

**MATEMATIK TAMBAHAN**

**Kertas 1**

**September 2017**

**2 jam**

**Dua jam**

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**JANGAN BUKA KERTAS SOALAN INI SEHINGGA DIBERITAHU**

1. *Tuliskan **nama** dan **tingkatan** anda pada ruangan yang disediakan.*
2. *Kertas soalan ini adalah dalam dwibahasa.*
3. *Soalan dalam bahasa Inggeris mendahului soalan yang sepadan dalam bahasa Melayu.*
4. *Calon dibenarkan menjawab keseluruhan atau sebahagian soalan sama ada dalam bahasa Inggeris atau bahasa Melayu.*
5. *Calon dikehendaki membaca maklumat di halaman belakang kertas soalan ini.*

<i>Untuk Kegunaan Pemeriksa</i>		
Soalan	Markah Penuh	Markah Diperolehi
<b>1</b>	2	
<b>2</b>	2	
<b>3</b>	3	
<b>4</b>	4	
<b>5</b>	3	
<b>6</b>	3	
<b>7</b>	4	
<b>8</b>	2	
<b>9</b>	3	
<b>10</b>	3	
<b>11</b>	4	
<b>12</b>	3	
<b>13</b>	3	
<b>14</b>	4	
<b>15</b>	3	
<b>16</b>	3	
<b>17</b>	3	
<b>18</b>	3	
<b>19</b>	4	
<b>20</b>	3	
<b>21</b>	3	
<b>22</b>	4	
<b>23</b>	4	
<b>24</b>	3	
<b>25</b>	4	
<b>JUMLAH</b>	<b>80</b>	

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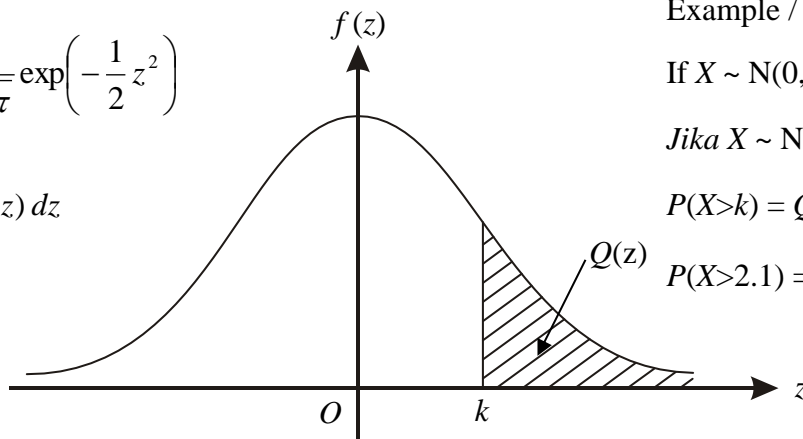
Kertas soalan ini mengandungi **20** halaman bercetak dan 0 halaman tidak bercetak.

**THE UPPER TAIL PROBABILITY Q(z) FOR THE NORMAL DISTRIBUTION N(0, 1)**  
**KEBARANGKALIAN HUJUNG ATAS Q(z) BAGI TABURAN NORMAL N(0, 1)**

z										Minus / Tolak									
	0	1	2	3	4	5	6	7	8	9	1	2	3	4	5	6	7	8	9
0.0	0.5000	0.4960	0.4920	0.4880	0.4840	0.4801	0.4761	0.4721	0.4681	0.4641	4	8	12	16	20	24	28	32	36
0.1	0.4602	0.4562	0.4522	0.4483	0.4443	0.4404	0.4364	0.4325	0.4286	0.4247	4	8	12	16	20	24	28	32	36
0.2	0.4207	0.4168	0.4129	0.4090	0.4052	0.4013	0.3974	0.3936	0.3897	0.3859	4	8	12	15	19	23	27	31	35
0.3	0.3821	0.3783	0.3745	0.3707	0.3669	0.3632	0.3594	0.3557	0.3520	0.3483	4	7	11	15	19	22	26	30	34
0.4	0.3446	0.3409	0.3372	0.3336	0.3300	0.3264	0.3228	0.3192	0.3156	0.3121	4	7	11	15	18	22	25	29	32
0.5	0.3085	0.3050	0.3015	0.2981	0.2946	0.2912	0.2877	0.2843	0.2810	0.2776	3	7	10	14	17	20	24	27	31
0.6	0.2743	0.2709	0.2676	0.2643	0.2611	0.2578	0.2546	0.2514	0.2483	0.2451	3	7	10	13	16	19	23	26	29
0.7	0.2420	0.2389	0.2358	0.2327	0.2296	0.2266	0.2236	0.2206	0.2177	0.2148	3	6	9	12	15	18	21	24	27
0.8	0.2119	0.2090	0.2061	0.2033	0.2005	0.1977	0.1949	0.1922	0.1894	0.1867	3	5	8	11	14	16	19	22	25
0.9	0.1841	0.1814	0.1788	0.1762	0.1736	0.1711	0.1685	0.1660	0.1635	0.1611	3	5	8	10	13	15	18	20	23
1.0	0.1587	0.1562	0.1539	0.1515	0.1492	0.1469	0.1446	0.1423	0.1401	0.1379	2	5	7	9	12	14	16	19	21
1.1	0.1357	0.1335	0.1314	0.1292	0.1271	0.1251	0.1230	0.1210	0.1190	0.1170	2	4	6	8	10	12	14	16	18
1.2	0.1151	0.1131	0.1112	0.1093	0.1075	0.1056	0.1038	0.1020	0.1003	0.0985	2	4	6	7	9	11	13	15	17
1.3	0.0968	0.0951	0.0934	0.0918	0.0901	0.0885	0.0869	0.0853	0.0838	0.0823	2	3	5	6	8	10	11	13	14
1.4	0.0808	0.0793	0.0778	0.0764	0.0749	0.0735	0.0721	0.0708	0.0694	0.0681	1	3	4	6	7	8	10	11	13
1.5	0.0668	0.0655	0.0643	0.0630	0.0618	0.0606	0.0594	0.0582	0.0571	0.0559	1	2	4	5	6	7	8	10	11
1.6	0.0548	0.0537	0.0526	0.0516	0.0505	0.0495	0.0485	0.0475	0.0465	0.0455	1	2	3	4	5	6	7	8	9
1.7	0.0446	0.0436	0.0427	0.0418	0.0409	0.0401	0.0392	0.0384	0.0375	0.0367	1	2	3	4	4	5	6	7	8
1.8	0.0359	0.0351	0.0344	0.0336	0.0329	0.0322	0.0314	0.0307	0.0301	0.0294	1	1	2	3	4	4	5	6	6
1.9	0.0287	0.0281	0.0274	0.0268	0.0262	0.0256	0.0250	0.0244	0.0239	0.0233	1	1	2	2	3	4	4	5	5
2.0	0.0228	0.0222	0.0217	0.0212	0.0207	0.0202	0.0197	0.0192	0.0188	0.0183	0	1	1	2	2	3	3	4	4
2.1	0.0179	0.0174	0.0170	0.0166	0.0162	0.0158	0.0154	0.0150	0.0146	0.0143	0	1	1	2	2	2	3	3	4
2.2	0.0139	0.0136	0.0132	0.0129	0.0125	0.0122	0.0119	0.0116	0.0113	0.0110	0	1	1	1	2	2	2	3	3
2.3	0.0107	0.0104	0.0102								0	1	1	1	1	2	2	2	2
			0.00990								3	5	8	10	13	15	18	20	23
				0.00964	0.00939	0.00914		0.00889	0.00866	0.00842	2	5	7	9	12	14	16	16	21
2.4	0.00820	0.00798	0.00776	0.00755	0.00734						2	4	6	8	11	13	15	17	19
						0.00714	0.00695	0.00676	0.00657	0.00639	2	4	6	7	9	11	13	15	17
2.5	0.00621	0.00604	0.00587	0.00570	0.00554	0.00539	0.00523	0.00508	0.00494	0.00480	2	3	5	6	8	9	11	12	14
2.6	0.00466	0.00453	0.00440	0.00427	0.00415	0.00402	0.00391	0.00379	0.00368	0.00357	1	2	3	5	6	7	9	9	10
2.7	0.00347	0.00336	0.00326	0.00317	0.00307	0.00298	0.00289	0.00280	0.00272	0.00264	1	2	3	4	5	6	7	8	9
2.8	0.00256	0.00248	0.00240	0.00233	0.00226	0.00219	0.00212	0.00205	0.00199	0.00193	1	1	2	3	4	4	5	6	6
2.9	0.00187	0.00181	0.00175	0.00169	0.00164	0.00159	0.00154	0.00149	0.00144	0.00139	0	1	1	2	2	3	3	4	4
3.0	0.00135	0.00131	0.00126	0.00122	0.00118	0.00114	0.00111	0.00107	0.00104	0.00100	0	1	1	2	2	2	3	3	4

$$f(z) = \frac{1}{\sqrt{2\pi}} \exp\left(-\frac{1}{2}z^2\right)$$

$$Q(z) = \int_k^{\infty} f(z) dz$$



Example / Contoh:

If  $X \sim N(0, 1)$ , then

Jika  $X \sim N(0, 1)$ , maka

$$P(X > k) = Q(k)$$

$$P(X > 2.1) = Q(2.1) = 0.0179$$

The following formulae may be helpful in answering the questions. The symbols given are the ones commonly used.

Rumus-rumus berikut boleh membantu anda menjawab soalan. Simbol-simbol yang diberi adalah yang biasa digunakan.

### ALGEBRA

$$1 \quad x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

$$2 \quad a^m \times a^n = a^{m+n}$$

$$3 \quad a^m \div a^n = a^{m-n}$$

$$4 \quad (a^m)^n = a^{mn}$$

$$5 \quad \log_a mn = \log_a m + \log_a n$$

$$6 \quad \log_a \frac{m}{n} = \log_a m - \log_a n$$

$$7 \quad \log_a m^n = n \log_a m$$

$$8 \quad \log_a b = \frac{\log_c b}{\log_c a}$$

$$9 \quad T_n = a + (n-1)d$$

$$10 \quad S_n = \frac{n}{2}[2a + (n-1)d]$$

$$11 \quad T_n = ar^{n-1}$$

$$12 \quad S_n = \frac{a(r^n - 1)}{r - 1} = \frac{a(1 - r^n)}{1 - r}, \quad r \neq 1$$

$$13 \quad S_\infty = \frac{a}{1 - r}, \quad |r| < 1$$

### CALCULUS KALKULUS

$$1 \quad y = uv, \quad \frac{dy}{dx} = u \frac{dv}{dx} + v \frac{du}{dx}$$

$$2 \quad y = \frac{u}{v}, \quad \frac{dy}{dx} = \frac{v \frac{du}{dx} - u \frac{dv}{dx}}{v^2}$$

$$3 \quad \frac{dy}{dx} = \frac{dy}{du} \times \frac{du}{dx}$$

4 Area under a curve  
Luas di bawah lengkung

$$= \int_a^b y \, dx \text{ or (atau)}$$

$$= \int_a^b x \, dy$$

5 Volume of revolution  
Isi padukisaran

$$= \int_a^b \pi y^2 \, dx \text{ or (atau)}$$

$$= \int_a^b \pi x^2 \, dy$$

**STATISTICS**  
**STATISTIK**

$$1 \quad \bar{x} = \frac{\sum x}{N}$$

$$2 \quad \bar{x} = \frac{\sum fx}{\sum f}$$

$$3 \quad \sigma = \sqrt{\frac{\sum (x - \bar{x})^2}{N}} = \sqrt{\frac{\sum x^2}{N} - \bar{x}^2}$$

$$4 \quad \sigma = \sqrt{\frac{\sum f(x - \bar{x})^2}{\sum f}} = \sqrt{\frac{\sum fx^2}{\sum f} - \bar{x}^2}$$

$$5 \quad m = L + \left( \frac{\frac{1}{2}N - F}{f_m} \right) C$$

$$6 \quad I = \frac{Q_1}{Q_0} \times 100$$

$$7 \quad \bar{I} = \frac{\sum W_i I_i}{\sum W_i}$$

$$8 \quad {}^n P_r = \frac{n!}{(n-r)!}$$

$$9 \quad {}^n C_r = \frac{n!}{(n-r)!r!}$$

$$10 \quad P(A \cup B) = P(A) + P(B) - P(A \cap B)$$

$$11 \quad P(X = r) = {}^n C_r p^r q^{n-r}, p + q = 1$$

$$12 \quad \text{Mean / Min, } \mu = np$$

$$13 \quad \sigma = \sqrt{npq}$$

$$14 \quad Z = \frac{X - \mu}{\sigma}$$

**GEOMETRY**  
**GEOMETRI**

$$1 \quad \text{Distance / Jarak} \\ = \sqrt{(x_1 - x_2)^2 + (y_1 - y_2)^2}$$

$$2 \quad \text{Midpoint / Titiktengah} \\ (x, y) = \left( \frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2} \right)$$

3 A point dividing a segment of a line  
*Titikyang membahagisuatutemberenggaris*

$$(x, y) = \left( \frac{nx_1 + mx_2}{m + n}, \frac{ny_1 + my_2}{m + n} \right)$$

$$4 \quad \text{Area of triangle / Luassegitiga} \\ = \frac{1}{2} |(x_1 y_2 + x_2 y_3 + x_3 y_1) - (x_2 y_1 + x_3 y_2 + x_1 y_3)|$$

$$5 \quad |\underline{r}| = \sqrt{x^2 + y^2}$$

$$6 \quad \hat{\underline{r}} = \frac{x\underline{i} + y\underline{j}}{\sqrt{x^2 + y^2}}$$

**TRIGONOMETRY**  
**TRIGONOMETRI**

1 Arc length,  $s = r\theta$   
*Panjang lengkok,  $s = j\theta$*

2 Area of sector,  $A = \frac{1}{2}r^2\theta$

*Luassektor,  $L = \frac{1}{2}j^2\theta$*

3  $\sin^2 A + \cos^2 A = 1$   
 $\sin^2 A + \text{kos}^2 A = 1$

4  $\sec^2 A = 1 + \tan^2 A$   
 $\text{sek}^2 A = 1 + \tan^2 A$

5  $\text{cosec}^2 A = 1 + \cot^2 A$   
 $\text{kosek}^2 A = 1 + \text{kot}^2 A$

6  $\sin 2A = 2 \sin A \cos A$   
 $\sin 2A = 2 \sin A \text{ kos } A$

7  $\cos 2A = \cos^2 A - \sin^2 A$   
 $= 2\cos^2 A - 1$   
 $= 1 - 2\sin^2 A$

$\text{kos } 2A = \text{kos}^2 A - \sin^2 A$   
 $= 2\text{kos}^2 A - 1$   
 $= 1 - 2\sin^2 A$

8  $\sin(A \pm B) = \sin A \cos B \pm \cos A \sin B$   
 $\sin(A \pm B) = \sin A \text{ kos } B \pm \text{kos } A \sin B$

9  $\cos(A \pm B) = \cos A \cos B \mp \sin A \sin B$   
 $\text{kos}(A \pm B) = \text{kos } A \text{ kos } B \mp \sin A \sin B$

10  $\tan(A \pm B) = \frac{\tan A \pm \tan B}{1 \mp \tan A \tan B}$

11  $\tan 2A = \frac{2 \tan A}{1 - \tan^2 A}$

12  $\frac{a}{\sin A} = \frac{b}{\sin B} = \frac{c}{\sin C}$

13  $a^2 = b^2 + c^2 - 2bc \cos A$   
 $a^2 = b^2 + c^2 - 2bc \text{ kos } A$

14 Area of triangle / *Luassegitiga*  
 $= \frac{1}{2} ab \sin C$

Answer **all** questions  
Jawab **semua** soalan

For  
Examiner's  
use

1

Murid / <i>students</i>	Skor / <i>score</i>	Min / <i>Mean</i>	Sisihan Piawai / <i>Standard Deviation</i>
Aisyah	85 87 90 93 95	90	3.688
Fatimah	91 90 88 90 91	90	1.095

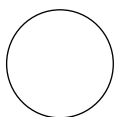
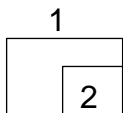
Table 1  
*Jadual 1*

Table 1 shows the marks scored by two students Aisyah and Fatimah in the examination of five subjects. An award is given to the student who shows an excellent and consistent performance. Based on the data determine which student is better qualified for the award. Give reason for your answer.

*Jadual 1 menunjukkan skor markah oleh dua orang murid Aisyah dan Fatimah di dalam suatu peperiksaan bagi lima mata pelajaran. Satu anugerah akan diberikan kepada murid yang mencatatkan prestasi cemerlang dan konsisten. Berdasarkan data tersebut, tentukan murid yang manakah paling layak menerima anugerah. Beri sebab untuk jawapan anda.*

[ 2 marks ]  
[ 2 markah ]

Answer / *Jawapan* :



2

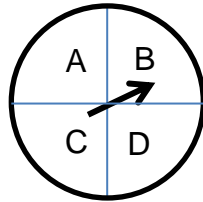


Diagram 2  
Rajah 2

Diagram 2 shows a spinner of a circle divided into four equal quadrants. The spinner is spinned twice. Find the probability that the pointer falls in the quadrant B twice

Rajah 2 menunjukkan jarum pemutar di atas bulatan yang dibahagikan kepada empat sukuan yang sama. Jarum pemutar itu diputarkan dua kali. Cari kebarangkalian bahawa jarum pemutar jatuh di sukuan B sebanyak dua kali

[ 2 marks ]  
[ 2 markah ]

Answer / Jawapan :

For  
Examiner's  
use

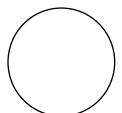
2  
2

- 3 Find the number of ways 4 people can sit in a row of 4 chairs.  
Cari bilangan cara 4 orang boleh duduk di dalam satu barisan 4 kerusi.

[ 3 marks ]  
[ 3 markah ]

Answer / Jawapan :

3  
3



For  
Examiner's  
use

- 4 In a shooting practices, Azlan shoots 8 times. The probability that Azlan hits the target is  $p$ . It is found that the mean of hitting the target is 2.

*Dalam suatu latihan menembak, Azlan membuat tembakan sebanyak 8 kali. Kebarangkalian Azlan menembak dan mengenai sasaran ialah  $p$ . Didapati bahawa min tembakan mengenai sasaran ialah 2.*

Find

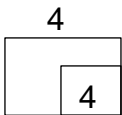
*Cari*

- (a) the value of  $p$   
*nilai  $p$*

- (b) the probability that Azlan hits the target at least one time  
*Kebarangkalian bahawa Azlan menembak mengenai sasaran sekurang-kurangnya sekali*

[ 4 marks ]  
[ 4 markah ]

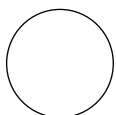
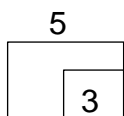
Answer / *Jawapan* :



- 5 Kirakan / *Calculate*  $\int_1^3 \left( \frac{1}{(3x-5)^2} \right) dx$

[ 3 marks ]  
[ 3 markah ]

Answer / *Jawapan* :





- 6 Two variables  $x$  and  $y$  are related by the equation  $y = \frac{3}{x} - 2x$ . Given that  $y$  increases at a constant rate of 5 units per second, find the rate of change of  $x$  when  $x = 1$   
 Dua pemboleh ubah  $x$  dan  $y$  dihubungkan oleh persamaan  $y = \frac{3}{x} - 2x$ . Diberikan bahawa  $y$  meningkat dengan kadar malar 5 unit per saat, cari kadar perubahan  $x$  apabila  $x = 1$

For  
Examiner's  
use

[ 3 marks ]  
[ 3 markah ]

Answer / Jawapan :

6

3

- 7 The curve  $y = 2x^2 + ax + b$  has a gradient of 8 at the point ( 1 , 5 ). Find the values of  $a$  and  $b$

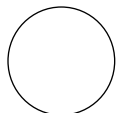
Lengkungan  $y = 2x^2 + ax + b$  mempunyai kecerunan 8 di titik ( 1 , 5 ).  
Cari nilai  $a$  dan  $b$

[ 4 marks ]  
[ 4 markah ]

Answer / Jawapan :

7

4



For  
Examiner's  
use

8

$$y = kx - 1$$

$$2y = 4(m - 5)x + 3$$

Given that two equations above are the equations of two parallel lines. Express  $m$  in term of  $k$

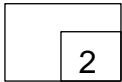
*Diberikan bahawa dua persamaan di atas adalah dua persamaan garis lurus yang selari . Ungkapkan  $m$  dalam sebutan  $k$ .*

[ 2 marks ]

[ 2 markah ]

Answer / Jawapan :

8



9 Given that  $P(0,1)$ ,  $Q(1,4)$ ,  $R(2,7)$  and  $S(3, 10)$ . Show that points  $P$ ,  $Q$ ,  $R$  and  $S$  are collinear

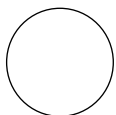
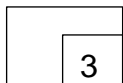
*Diberi  $P(0,1)$ ,  $Q(1,4)$ ,  $R(2,7)$  and  $S(3, 10)$ . Tunjukkan bahawa  $P$ ,  $Q$ ,  $R$  dan  $S$  adalah segaris*

[ 3 marks ]

[ 3 markah ]

Answer / Jawapan :

9



10 Given  $\vec{a} = 3\vec{i} + (1 - k)\vec{j}$ . Cari nilai  $k$  jika  $|\vec{a}| = 5$

Diberikan  $\vec{a} = 3\vec{i} + (1 - k)\vec{j}$ . Cari nilai  $k$  jika  $|\vec{a}| = 5$

[ 3 marks ]  
[ 3 markah ]

Answer / Jawapan :

For  
Examiner's  
use

10

3
---

11 Given that  $f : x \rightarrow 2x + k$ .  
Diberikan  $f : x \rightarrow 2x + k$ .

Find  
Cari

( a ) the inverse function  $f^{-1}(x)$  in terms of  $k$   
fungsi songang  $f^{-1}(x)$  dalam sebutan  $k$

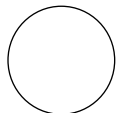
( b ) the value of  $k$  if  $f^{-1}(2k) = 5$   
nilai  $k$  jika  $f^{-1}(2k) = 5$

[ 4 marks ]  
[ 4 markah ]

Answer / Jawapan :

11

4
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14 If  $\log_5 3 = 0.682$ , find the value of  $\log_5 \frac{3}{10} + \log_5 \frac{4}{5} - \log_5 \frac{2}{5}$

Jika  $\log_5 3 = 0.682$ , cari nilai bagi  $\log_5 \frac{3}{10} + \log_5 \frac{4}{5} - \log_5 \frac{2}{5}$

[ 4 marks ]  
[ 4 markah ]

Answer / Jawapan :

For  
Examiner's  
use

14

4

15 It is given that  $2^n = p$ . Express  $2^{n+3} - 2^n$  in terms of  $p$

Diberikan bahawa  $2^n = p$ . Ungkapkan  $2^{n+3} - 2^n$  dalam sebutan  $p$

[ 3 marks ]  
[ 3 markah ]

Answer / Jawapan :

15

3

For  
Examiner's  
use

- 16 Variables  $x$  and  $y$  are related by the equation  $y = a(x^{k-1})$ , where  $a$  and  $k$  are constants. The equation is reduced to linear form  $Y = 3X + 2$  such that a straight line graph can be drawn when  $Y$  is plotted against  $X$ .

*Pembolehkan  $x$  dan  $y$  dihubungkan oleh persamaan  $y = a(x^{k-1})$ , dengan keadaan  $a$  dan  $k$  ialah pemalar. Persamaan itu diturunkan kepada bentuk linear  $Y = 3X + 2$  dengan keadaan satu graf garis lurus boleh dilukis apabila  $Y$  diplotkan melawan  $X$ .*

Find the value of  $a$  and of  $k$ .  
Cari nilai  $a$  dan nilai  $k$ .

[ 3 marks ]  
[ 3 markah ]

Answer / Jawapan :

16

	3
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- 17 The quadratic equation  $2x^2 + \sqrt{p}x = q - 1$  has two equal roots where  $p$  and  $q$  are constants. Express  $q$  in terms of  $p$

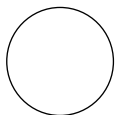
*Persamaan kuadratik  $2x^2 + \sqrt{p}x = q - 1$  mempunyai dua punca yang sama dengan keadaan  $p$  dan  $q$  adalah pemalar. Ungkapkan  $q$  dalam sebutan  $p$*

[ 3 marks ]  
[ 3 markah ]

Answer / Jawapan :

17

	3
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- 18 Find the range values of  $x$  for  $x(1 - 4x) < 5x - 8$   
 Cari julat nilai  $x$  untuk  $x(1 - 4x) < 5x - 8$

[ 3 marks ]  
 [ 3 markah ]

Answer / Jawapan :

For  
 Examiner's  
 use

18

3
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- 19 Diagram 19 shows  $AB$  is an arc of a circle with centre at  $O$ .  
 Rajah 19 menunjukkan  $AB$  sebagai lengkok bulatan berpusat  $O$ .

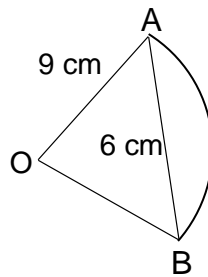


Diagram 19 / Rajah 19

If the radius of the circle is 9 cm and the chord  $AB$  is 6 cm, calculate

Jika jejari bulatan adalah 9cm dan perentas  $AB$  ialah 6cm, hitung

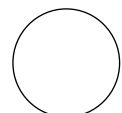
- ( a ) the angle  $AOB$ , in radians,  
 sudut  $AOB$  dalam radian
- ( b ) the length of arc  $AB$ .  
 panjang lengkok  $AB$

[ 4 marks ]  
 [ 4 markah ]

Answer / Jawapan :

19

4
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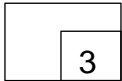
For  
Examiner's  
use

- 20 Solve the equation  $7\sin x + 3\cos 2x = 0$  for  $0^\circ \leq x \leq 360^\circ$ .  
*Selesaikan persamaan  $7\sin x + 3\cos 2x = 0$  untuk  $0^\circ \leq x \leq 360^\circ$*

[ 3 marks ]  
[ 3 markah ]

Answer / Jawapan :

20

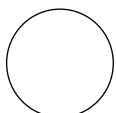
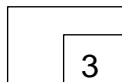


- 21 Given 8,  $3x - 2$  and 18 are the first three terms of an arithmetic progression. Find the fifth term.  
*Diberi 8,  $3x - 2$  dan 18 ialah tiga sebutan pertama bagi suatu jangjang arimetik. Cari sebutan yang kelima.*

[ 3 marks ]  
[ 3 markah ]

Answer / Jawapan :

21





- 22 Given  $\frac{k}{m+2} = 0.272727 \dots$  is a recurring decimal, where  $k$  and  $m$  are positive integers. Find the value of  $k$  and  $m$ .

*Diberi  $\frac{k}{m+2} = 0.272727 \dots$  ialah perpuluhan jadi semula dengan keadaan  $k$  dan  $m$  ialah integer positif. Cari nilai  $k$  dan  $m$ .*

[ 4 marks ]  
[ 4 markah ]

Answer / Jawapan :

For  
Examiner's  
use

22

	4
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- 23 In a race, a driver took 2 minutes to finish the first round. In the subsequent rounds, he took 6 seconds less than the previous rounds. Find

*Dalam satu perlumbaan, seorang pemandu mengambil masa 2 minit untuk menghabiskan pusingan yang pertama. Bagi pusingan-pusingan yang seterusnya, pemandu mengambil masa 6 saat kurang daripada pusingan yang sebelumnya. Cari*

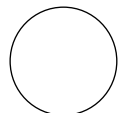
- ( a ) the time, in minutes, he took to finish the 6th round  
*masa, dalam minit, yang diambil untuk menghabiskan pusingan yang ke-6*
- ( b ) the total time, in minutes, he took to finish the first 6 rounds.  
*jumlah masa, dalam minit, yang diambil untuk melalui 6 pusingan yang pertama*

[ 4 marks ]  
[ 4 markah ]

Answer / Jawapan :

23

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For  
Examiner's  
use

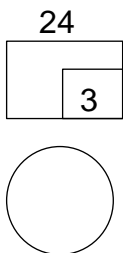
- 24 The mass of chickens in a poultry farm has a normal distribution with a mean of 1.7kg and a standard deviation of 0.4 kg.  
*Jisim ayam dalam sebuah ladang ternakan mempunyai taburan normal dengan min 1.7 kg dan sisihan piawai 0.4 kg.*

Find  
*Cari*

- (a) the mass of chickens which gives a standard score of - 0.2,  
*jisim ayam apabila skor piawai ialah - 0.2,*
- (b) the percentage of chickens with mass greater than 1.5 kg.  
*peratus ayam yang jisimnya lebih daripada 1.5 kg.*

[ 3 marks ]  
[ 3 markah ]

Answer / *Jawapan :*



- 25 A Badminton team that consists of 6 students in to be chosen from a group of 8 male students and 5 female students. Calculate the number of the different teams that can be form if each team must consist of

For  
Examiner's  
use

*Satu pasukan badminton yang mengandungi 6 orang pelajar dipilih daripada satu kumpulan 8 pelajar lelaki dan 5 pelajar perempuan. Hitungkan bilangan pasukan yang berlainan dapat dibentuk jika pasukan itu mesti mengandungi*

- (a) exactly 4 male students,  
*tepat 4 pelajar lelaki,*  
(b) not more than 2 female students,  
*tidak lebih daripada 2 pelajar perempuan.*

[ 4 marks ]  
[ 4 markah ]

Answer / Jawapan :

25

4
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○

**INFORMATION FOR CANDIDATES**  
**MAKLUMAT UNTUK CALON**

1. This question paper consists of **25** questions.  
*Kertas soalan ini mengandungi **25** soalan.*
2. Answer **all** questions.  
*Jawab **semua** soalan.*
3. Write your answers in the spaces provided in this question paper.  
*Jawapan hendaklah ditulis pada ruang yang disediakan dalam kertas soalan ini.*
4. Show your working. It may help you to get marks.  
*Tunjukkan langkah-langkah penting dalam kerja mengira anda. Ini boleh membantu anda untuk mendapatkan markah.*
5. If you wish to change your answer, cross out the work that you have done. Then write down the new answer.  
*Sekiranya anda hendak menukar jawapan, batalkan jawapan yang telah dibuat. Kemudian tulis jawapan yang baru.*
6. The diagrams in the questions provided are not drawn to scale unless stated.  
*Rajah yang mengiringi soalan tidak dilukis mengikut skala kecuali dinyatakan.*
7. The marks allocated for each question are shown in brackets.  
*Markah yang diperuntukkan bagi setiap soalan ditunjukkan dalam kurungan.*
8. The Upper Tail Probability  $Q(z)$  For The Normal Distribution  $N(0, 1)$  Table is provided on page **2**.  
*Jadual Kebarangkalian Hujung Atas  $Q(z)$  Bagi Taburan Normal  $N(0, 1)$  disediakan di halaman **2**.*
9. A list of formulae is provided on pages 3 to 5.  
*Satu senarai rumus disediakan di halaman 3 hingga 5.*
10. You may use a scientific calculator.  
*Anda dibenarkan menggunakan kalkulator saintifik.*
11. Hand in this question paper to the invigilator at the end of the examination.  
*Serahkan kertas soalan ini kepada pengawas peperiksaan di akhir peperiksaan.*