Nama:…….. Kelas : ……..

Matematik
Tambahan
Kertas 1
2 jam
Ogos 2014

PEPERIKSAAN PERPERCUBAAN SPM 2014

MATEMATIK TAMBAHAN

Kertas 1
Dua jam

JANGAN BUKA KERTAS SOALAN INI SEHINGGA DIBERITAHU

1. *Kertas soalan ini mengandungi* 25 soalan.
2. *Jawab* ***semua*** *soalan.*
3. *Bagi setiap soalan berikan SATU jawapan sahaja.*
4. *Jawapan hendaklah ditulis pada ruang yang disediakan dalam kertas soalan.*
5. *Tunjukkan langkah-langkah penting dalam kerja mengira anda. Ini boleh membantu anda untuk mendapatkan markah.*
6. *Sekiranya anda hendak menukar jawapan. Batalkan kerja mengira yang telah dibuat . Kemudian tulislah jawapan yang baru.*
7. *Rajah yang mengiringi soalan ini tidak dilukiskan mengikut skala kecuali dinyatakan.*
8. *Markah yang diperuntukkan bagi setiap soalan atau ceraian soalan ditunjukkan dalam kurungan.*
9. *Satu senarai rumus disediakan di halaman 2 hingga 3.*
10. *Buku sifir matematik empat angka disediakan.*
11. *Penggunaan kalkulator saintifik yang tidak boleh diprogramkan adalah dibenarkan.*

Kod Pemeriksa		
Soalan	Markah Penuh	Markah Diperoleh
1	2	
2	2	
3	4	
4	3	
5	3	
6	3	
7	3	
8	4	
9	2	
10	3	
11	4	
12	2	
13	4	
14	3	
15	3	
16	4	
17	4	
18	4	
19	3	
20	2	
21	3	
22	4	
23	3	
24	4	
25	4	
Jumlah	80	

Kertas soalan ini mengandungi 19 halaman bercetak

The following formulae may be helpful in answering the questions. The symbols given are the ones commonly used.
Rumus-rumus berikut boleh digunakan untuk membantu anda menjawab soalan. . Simbol-simbol yang diberi adalah yang biasa digunakan.

ALGEBRA

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

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

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

4 $(a^m)^n = a^{nm}$

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

6 $\log_a \dfrac{m}{n} = \log_a m - \log_a n$

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

8 $\log_a b = \dfrac{\log_c b}{\log_c a}$

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

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

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

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

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

CALCULUS

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

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

3 $\dfrac{dy}{dx} = \dfrac{dy}{du} \times \dfrac{du}{dx}$

4 Area under a curve

$= \int_a^b y \, dx$ or

$= \int_a^b x \, dy$

5 Volume generated

$= \int_a^b \pi y^2 \, dx$ or

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

GEOMETRY

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

2 Midpoint

$(x , y) = \left(\dfrac{x_1 + x_2}{2} , \dfrac{y_1 + y_2}{2} \right)$

3 $|r| = \sqrt{x^2 + y^2}$

4 $\hat{r} = \dfrac{xi + yj}{\sqrt{x^2 + y^2}}$

5 A point dividing a segment of a line

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

6 Area of triangle

$= \dfrac{1}{2}\left| (x_1y_2 + x_2y_3 + x_3y_{1_1}) - (x_2y_1 + x_3y_2 + x_1y_3) \right|$

STATISTIC

1 $\bar{x} = \dfrac{\sum x}{N}$

2 $\bar{x} = \dfrac{\sum fx}{\sum f}$

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

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

5 $m = L + \left[\dfrac{\frac{1}{2}N - F}{f_m}\right]C$

6 $I = \dfrac{Q_1}{Q_0} \times 100$

7 $\bar{I} = \dfrac{\sum w_1 I_1}{\sum w_1}$

8 ${}^nP_r = \dfrac{n!}{(n-r)!}$

9 ${}^nC_r = \dfrac{n!}{(n-r)!r!}$

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

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

12 Mean $\mu = np$

13 $\sigma = \sqrt{npq}$

14 $z = \dfrac{x-\mu}{\sigma}$

TRIGONOMETRY

1 Arc length, $s = r\theta$

2 Area of sector , $L = \dfrac{1}{2}r^2\theta$

3 $\sin^2 A + \cos^2 A = 1$

4 $\sec^2 A = 1 + \tan^2 A$

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

6 $\sin 2A = 2 \sin A \cos A$

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

8 $\tan 2A = \dfrac{2\tan A}{1 - \tan^2 A}$

9 $\sin(A \pm B) = \sin A \cos B \pm \cos A \sin B$

10 $\cos(A \pm B) = \cos A \cos B \mp \sin A \sin B$

11 $\tan(A \pm B) = \dfrac{\tan A \pm \tan B}{1 \mp \tan A \tan B}$

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

13 $a^2 = b^2 + c^2 - 2bc\cos A$

14 Area of triangle $= \dfrac{1}{2}ab\sin C$

SULIT 4 3472/1

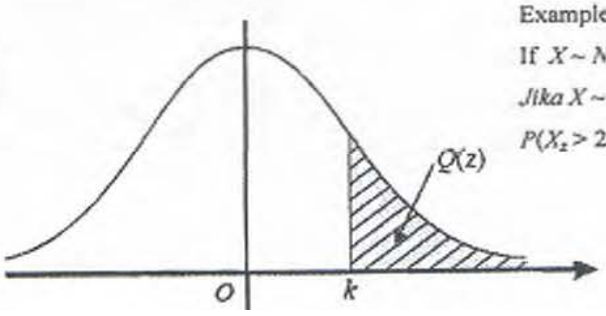
THE UPPER TAIL PROBABILITY Q(z) FOR THE NORMAL DISTRIBUTION N(0, 1)

KEBARANGKALIAN HUJUNG ATAS Q(z) BAGI TABURAN NORMAL N(0, 1)

z	0	1	2	3	4	5	6	7	8	9	1	2	3	4	5	6	7	8	9
											Minus / Tolak								
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	0.0387	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	0.00964	0.00939	0.00914				3	5	8	10	13	15	18	20	23
								0.00889	0.00865	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 $P(X > k) = Q(k)$

Jika $X \sim N(0,1)$, *maka* $P(X > k) = Q(k)$

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

For examiner's use only

Answer **all** *questions.*

1. H = { 3, 5, 6 }
K = { 5, 7, 8, 9, 12 }
Based on the above information, the relation between H and K is defined by the set of ordered pairs { (3,5), (3,7) , (5,8), (5,9) }.

Berdasarkan maklumat di atas, hubungan antara set H dan K ditakrifkan dalam bentuk pasangan tertib ialah { (3,5), (3,7) , (5,8), (5,9) }.

State
Nyatakan
(a) the image of 3,
imej bagi 3,
(b) the object of 5.
objek bagi 5.

[2 *marks*]
[2 *markah*]

Answer / *Jawapan* :

(a)

(b)

1
2

---

2 Given the function $f(x) = \frac{3x+4}{4-x}$, $x \neq 4$, find the value of x when $f(x) = -2$

Diberi bahawa fungsi $f(x) = \frac{3x+4}{4-x}$, $x \neq 4$, *cari nilai x apabila* $f(x) = -2$.

[2 *marks*]
[2 *markah*]

Answer / *Jawapan* :

2
2

For examiner's use only

3 Given $\frac{3}{2}$ and 1 are the roots of the quadratic equations $px^2 - 5x + q = 0$. By using sum of roots and product of roots, find the value of p and q.

Diberi $\frac{3}{2}$ *dan 1 ialah punca-punca bagi persamaan kuadratik* $px^2 - 5x + q = 0$.
Dengan menggunakan hasil tambah punca dan hasil darab punca, cari nilai p dan q.

[4 *marks*]
[4 *markah*]

3

4

4 Find the range of values of x such that $(-6x - 4)(x - 7) \leq 2x + 76$.
Cari julat nilai x bagi $(-6x - 4)(x - 7) \leq 2x + 76$.

[3 *marks*]
[3 *markah*]

4

3

For examiner's use only

5 Diagram 5 shows the graph of a quadratic function $y = (x-2)^2 + q$, where q is a constant. Given that the straight line $y = 3$, is a tangent to the curve $y = (x-2)^2 + q$.

Rajah 6 menunjukkan graf fungsi kuadratik $y = (x-2)^2 + q$. *Diberi garis lurus* $y = 3$, *ialah tangen kepada lengkung* $y = (x-2)^2 + q$.

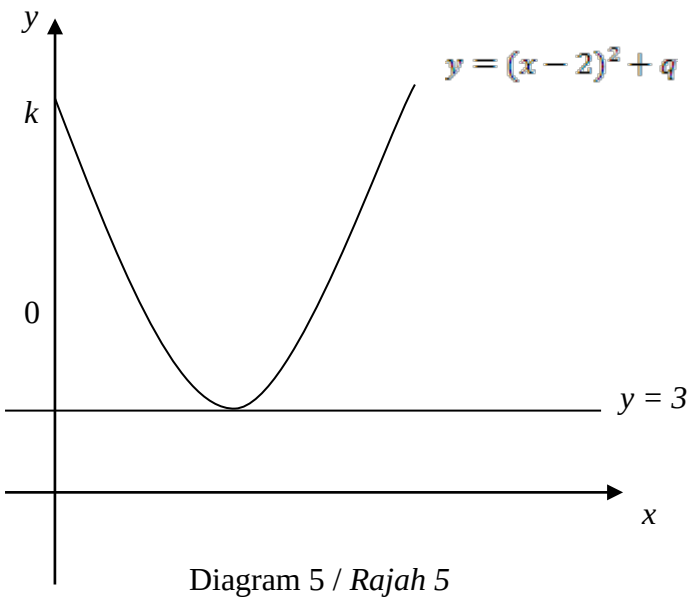


Diagram 5 / *Rajah 5*

(a) Write the equation of the axis of symmetry of the curve.
Tulis persamaan paksi simetri lengkung itu.

(b) the value of *q*
nilai q

(c) the value of *k*
nilai k

[3 *mar*ks]
[3 markah]

Answer / *Jawapan* :

(a)

(b)

(c)

5
3

For examiner's use only

6 Solve the equation $\log_2 (x + 2) + \log_2 x = 3$
Selesaikan persamaan $\log_2 (x + 2) + \log_2 x = 3$

[3 marks]
[3 *markah*]

Answer / *Jawapan* :

6
3

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7 Given that $p = \log_a 2$ and $q = \log_a 3$, express $\log_a 72$ in terms of p and q.
Diberi $p = \log_a 2$ *dan* $q = \log_a 3$, *ungkapkan* $\log_a 72$ *dalam sebutan p dan q.*

[3 *marks*]
[3 *markah*]

7
3

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8 Solve the equation $5^{x+2} + 5^{x+3} = 30$.
Solve the equation $5^{x+2} + 5^{x+3} = 30$.

[4 *marks*]
[4 *markah*]

8
4

For examiner's use only

9 *Find the sum of the first 20 terms of the arithmetic progression –2,3,8,.....*
Cari hasil tambah 20 sebutan pertama bagi janjang aritmetik –2,3,8,.....

[2 *marks*]
[2 *markah]*

Answer/ *Jawapan* :

9
2

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10 The sum of the first *n* terms of the geometric progression 64, 32, 16, … is 126. Find the value of *n*

Hasil tambah n sebutan pertama janjang geometri 64, 32, 16, …. ialah 126. Cari nilai bagi n

[3 *marks*]
[3 *markah*]

Answer/ *Jawapan* :

10
3

For examiner's use only

11 The variables x and y are related by the equation $y = px^3$, where p is a constant. Diagram 11 shows the straight line graph by plotting $\log_{10} y$ against $\log_{10} x$.

Pembolehubah x dan y dihubungkan oleh persamaan $y = px^3$, dengan keadaan p ialah pemalar. Rajah 11 menunjukkan graf garis lurus yang diperolehi dengan memplot $\log_{10} y$ melawan $\log_{10} x$.

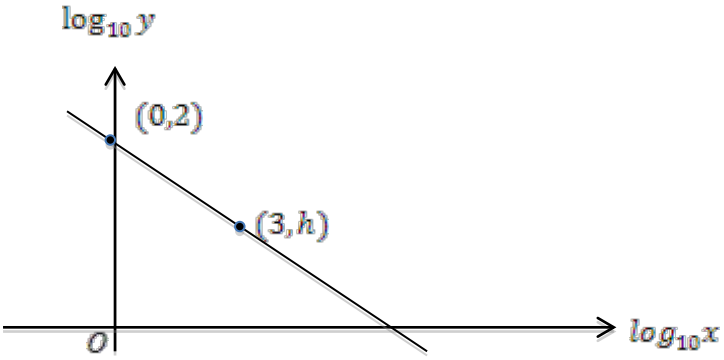

Diagram 11
Rajah 11

(a) Express the equation $y = px^3$ in linear form used to obtain the straight line graph shown in Diagram 11.
Ungkapkan persamaan $y = px^3$ dalam bentuk linear yang digunakan untuk memperoleh graf garis lurus seperti ditunjukkan dalam Rajah 11.

(b) Find the value of h and of p.
Cari nilai h dan nilai p.

[4 *marks*]
[4 *markah*]

Answer / *Jawapan* :

(a)

11

4

(b)

12 *The point B is (5,0).A point P(x,y) moves such that PB = 3 units.*
Find the equarion of the locus of P.

Titik B ialah (5,0).Titik P(x,y) bergerak dengan keadaan PB = 3 unit.
Cari persamaan lokus bagi P.

[2 *marks*]
[2 *markah*]

Answer / *Jawapan* :

12

2

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13 It is given that $\overrightarrow{OA} = 3\underset{\sim}{a} - 7\underset{\sim}{b}$, $\overrightarrow{OB} = 7\underset{\sim}{a} - 5\underset{\sim}{b}$ and $\overrightarrow{OC} = 11\underset{\sim}{a} - 3\underset{\sim}{b}$.

Diberi $\overrightarrow{OA} = 3\underset{\sim}{a} - 7\underset{\sim}{b}$, $\overrightarrow{OB} = 7\underset{\sim}{a} - 5\underset{\sim}{b}$ *dan* $\overrightarrow{OC} = 11\underset{\sim}{a} - 3\underset{\sim}{b}$.

(a) Find $\overrightarrow{AB}$.
Cari $\overrightarrow{AB}$.

(b) Hence, show that points *A, B* and *C* are collinear.
Seterusnya, tunjukkan titik-titik A, B dan C adalah segaris.

[4 *marks*]
[4 markah]

Answer / *Jawapan* :

(a)

(b)

13

4

For examiner's use only

14 Diagram 14 shows a triangle *PQR*.
Rajah 5 menunjukkan sebuah segi tiga PQR.

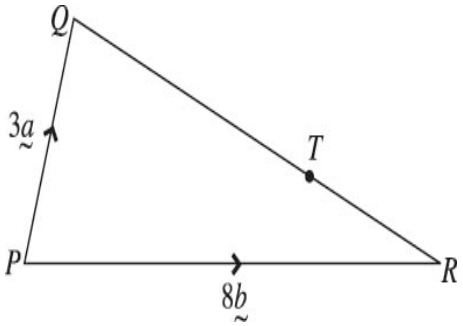


Diagram 14/ *Rajah 14*

Point *T* lies on *QR* such that *QT* : *TR* = 3 : 1.
Express in terms of $\underset{\sim}{a}$ and $\underset{\sim}{b}$, $\overrightarrow{PT}$.

Titik T terletak di atas QR dengan keadaan QT : TR = 3 : 1.
Ungkapkan dalam sebutan $\underset{\sim}{a}$ *dan* $\underset{\sim}{b}$, $\overrightarrow{PT}$.

[3 *marks*]
[*3 markah*]

Answer / *Jawapan* :

14

3

---

15 Selesaikan persamaan $\tan x = 3\sin x$ bagi $0° \leq x \leq 360°$.
Solve the equation $\tan x = 3\sin x$ *for* $0° \leq x \leq 360°$.

[3 *marks*]
[3 markah]

Answer / *Jawapan* :

15

3

For examiner's use only

16 Diagram 16 shows a circle with centre *O*.
Rajah 16 *menunjukkan sebuah bulatan berpusat O.*

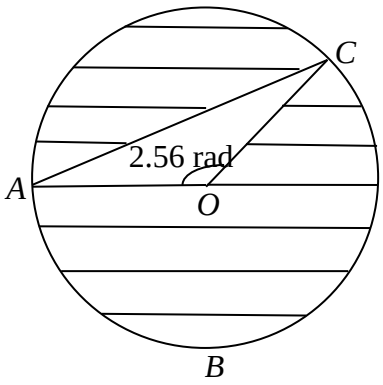


Diagram 16
Rajah 16

It is given that $\angle AOC = 2.56$ radians and the length of arc *ABC* is 55.86 cm.
Diberi $\angle AOC = 2.56$ *radian dan panjang lengkok ABC ialah* 55.86 cm.
[Use / *Guna* π = 3.142]

Calculate / *Hitungkan*
(a) the radius, in cm, of the circle,
jejari, dalam cm, *bagi bulatan itu,*
(b) the area, in cm^2 , of the shaded region.
Luas, dalam cm^2 , *kawasan berlorek.*

[4 marks]
[4 *markah*]

Answer / *Jawapan*:

(a)

(b)

16

4

17.

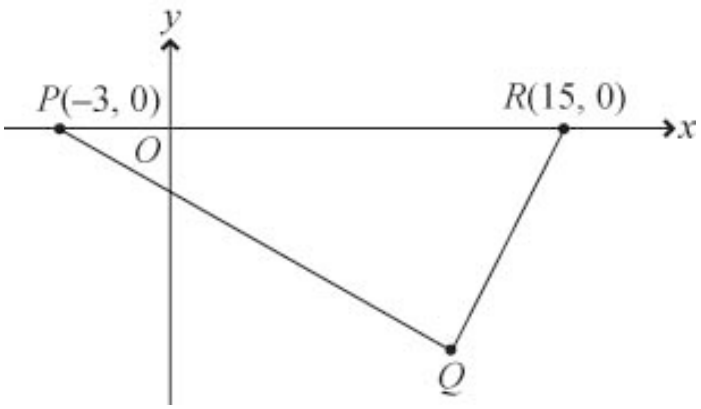


Diagram 17
Rajah 17

Diagram 17 shows the straight line *PQ* which is perpendicular to the straight line *QR* at point *Q*. The equation of the straight line *QR* is $y = x - 15$.
Find the coordinate of point *Q*.

Rajah 17 menunjukkan garis lurus PQ yang berserenjang dengan garis lurus QR pada titik Q. Persamaan bagi garis lurus QR ialah $y = x - 15$.
Cari koordinat titik Q.

.[4 marks]
[4 *markah*]

Answer / *Jawapan* :

17

4

For examiner's use only

18.

18 (a) Find

Cari $\lim_{x \to 2} \dfrac{4-x^2}{2-x}$

(b) Find $\dfrac{dy}{dx}$ when $y=(2x-3)^4$

Cari $\dfrac{dy}{dx}$ bila $y=(2x-3)^4$

.[4 marks]
[4*markah*]

Answer / *Jawapan* :

(a)

(b)

18

4

---

19. Given that the equation of a curve $y = x^2 + 5x - 9$, find the equation of the tangent to the curve at the point $(-2, 3)$.

Diberi bahawa persamaan satu lengkungan $y = x^2 + 5x - 9$, *cari persamaan bagi tangen* lengkungan itu pada titik $(-2, 3)$

[3 *marks*]
[3 *markah*]

Answer/*Jawapan*:

19

3

For examiner's use only

20. Given that, $\int_2^5 f(x)dx = 4$ find . $\int_2^5 (3 + f(x))dx$

Diberi $\int_2^5 f(x)dx = 4$, cari . $\int_2^5 (3 + f(x))dx$

[2 *marks*]
[2 *markah*]

Answer/*Jawapan*:

20

2

---

21. Given that, $\frac{d}{dx}\left(\frac{5x}{x-1}\right) = h(x)$ find . $\int_2^3 h(x)dx$

Diberi, $\frac{d}{dx}\left(\frac{5x}{x-1}\right) = h(x)$ cari . $\int_2^3 h(x)dx$

[3 *marks*]
[3 *markah*]

Answer/*Jawapan*:

21

3

22. A box contains 15 marbles. 6 of the marbles are red and the other 9 are blue marbles. Two marbles are taken at random from the box.
Sebuah kotak mengandungi 15 biji guli. 6 daripadanya adalah merah dan 9 lagi adalah guli biru. Dua biji guli diambil secara rawak dari kotak itu.

Find the probability that
Cari kebarangkalian bahawa

a) both marbles are blue,
kedua-dua guli adalah biru,

b) one of the marble red is red
salah satu guli adalah merah

[4 *marks*]
[4 markah]

Answer / *Jawapan* :

(a)

(b)

22

4

23 The number of ways in which a group of 5 men and 3 women can be seated in a row of
Bilangan cara sekumpulan 5 orang lelaki dan 3 orang perempuan dapat didudukkan dalam satu baris daripada

(a) 8 chairs,
8 kerusi,

(b) 8 chairs if the first two chairs in the row are occupied by the men.
8 kerusi jika dua kerusi yang pertama dipenuhi lelaki.

[3 *marks*]
[3*markah*]

23

3

---

24 The random variable X represents a binomial distribution with 7 trials and the probability of success is $\frac{3}{4}$.
Pemboleh ubah rawak X mewakili taburan binomial degan 7 percubaan dan kebarangkalian berjaya ialah $\frac{3}{4}$.

(*a*) the standard deviation of the distribution,
sisihan piawai taburan itu.

(*b*) the probability that at least two trials is success.
kebarangkalian bahawa sekuarang-kurangnya dua percubaan adalah berjaya.

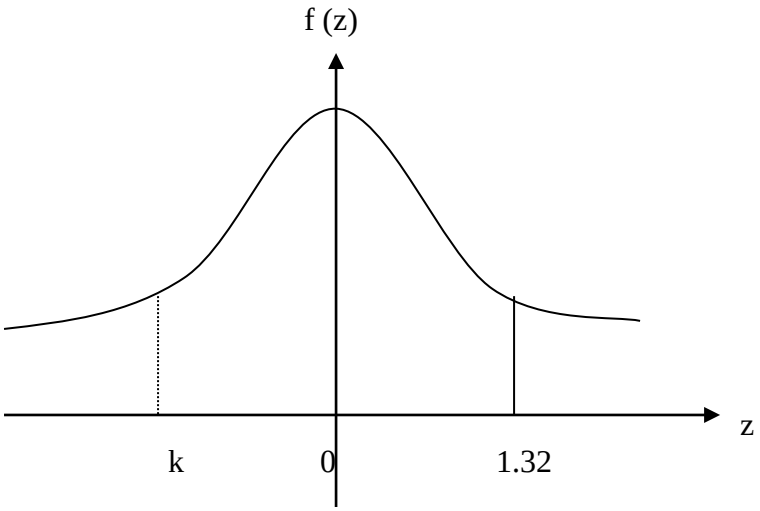
[4 *marks*]
[4 *markah*]

24

4

For examiner's use only

25. Diagram 25 shows a standard normal distribution graph.
Rajah 25 menunjukkan graf taburan normal piawai



Find
Cari

(a) P (Z > 1.32)

(b) the value of k if P (k < Z < 1.32) = 0.5981
nlai k jika P (k < Z < 1.32) = 0.5981

[4 *marks*]
[4 *markah*]

Answer/ *Jawapan* :

(a)

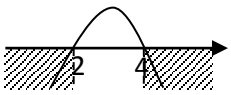
(b)

25

4

END OF QUESTION PAPER

SkemaJawapan
Kertas 1
PercubaanSPM 2014

No soalan	Jawapan	Markahsebahagian	Jumlah
1			
(a)	5 dan 7	1	
(b)	3	1	2
2	-1	2	
	$\frac{3x+4}{4-x} = -2$	B1	2
3	p = 2	2	
	q = 3	2	
	$\frac{5}{p} = \frac{5}{2}$ atau $\frac{q}{p} = \frac{3}{2}$	B2	
	SOR = $\frac{5}{2}$ atau POR = $\frac{3}{2}$	B1	4
4	$x \leq 2, \quad x \geq 4$	3	
		B2	
	$-6(x-4)(x-2) \leq 0$	B1	3
5			
(a)	x = 2	1	
(b)	3	1	
(c)	7	1	3
6	2	3	
	$x(x+2) = 8$	B2	
	$log_2 x(x + 2)=3$	B1	3
7	2q+3p	3	
	$\log_a 3^2 + \log_a 2^3$	B2	
	$\log_a (3^2 \times 2^3)$	B1	3
8	-1	4	
	$5^x = \frac{1}{5}$	B3	
	$5^x(25+125) = 30$	B2	
	$5^x.5^2 + 5^x.5^3 = 30$	B1	4
9	910	2	
	$\frac{20}{2}[2(-2)+19(5)]$	B1	2
10	6		
	$\frac{64(1-\frac{1}{2}^n)}{1-\frac{1}{2}} = 126$	B2	
	$r = \frac{1}{2}$	B1	3

No soalan	Jawapan	Markahsebahagian	Jumlah
11			
(a)	$\log_{10} y = \log_{10} p + 3\log_{10} x$	1	
(b)	$h = 11,$	1	
	$p = 100$	2	
	$\log_{10} p = 2$	B1	4
12	$x^2 + y^2 - 10x + 16 = 0$	2	
	$\sqrt{(x-5)^2 + (y-0)^2} = 3$	B1	2
13			
(a)	$\overrightarrow{AB} = 4a + 2b$	2	
	$\overrightarrow{AB} = \overrightarrow{AO} + \overrightarrow{OB}$	B1	
(b)	$m\overrightarrow{AB} = m\overrightarrow{AC} = \frac{1}{2}$	2	
	$\overrightarrow{AC} = \overrightarrow{AO} + \overrightarrow{OC} = 11a - 3b$	B1	4
14	$\frac{3}{4}a + 6b$	3	
	$3a + \frac{3}{4}[-3a + 8b]$	B2	
	$3a + \frac{3}{4}$QR	B1	3
15	$0°, 70°31', 289°29', 360°$	3	
	sin x=0 ataucos x =$\frac{1}{3}$	B2	
	sin x (3 cos x -1) = 0	B1	3
16			
(a)	15	2	
	$\frac{55.86}{(2\times 3.142 - 2.56)}$	B1	
(b)	645.15	2	
	$3.142(15^2) - \frac{1}{2}(15^2 \times \sin 2.56rad)$	B1	4
17	(6,-9)	4	
	2x – 12 = 0 (menyelesaikanpersamaanserentak)	B3	
	y = -x – 3 (persamaan PQ)	B2	
	m_{PQ} = -1	B1	4

No soalan	Jawapan	Markahsebahagian	Jumlah
18			
(a)	4	2	
	$\frac{(2-x)(2+x)}{(2-x)}$	B1	
(b)	$8(2x-3)^3$	2	
	$4(2x-3)^3(2)$	B1	4
19	$y = x + 5$	3	
	$y - 3 = 1(x - (-2))$	B2	
	$\frac{dy}{dx} = 2x + 5$	B1	3
20	13	2	
	$3x$	B1	2
21	$-\frac{5}{2}$	3	
	$\left[\frac{5(3)}{3-1}\right] - \left[\frac{5(2)}{2-1}\right]$	B2	
	$\left[\frac{5x}{x-1}\right]_2^3$	B1	3
22			
(a)	$\frac{12}{35}$	2	
	$\frac{9}{15} \times \frac{8}{14}$	B1	
(a)	$\frac{18}{35}$	2	
	$\frac{6}{15} \times \frac{9}{14} + \frac{9}{15} \times \frac{6}{14}$	B1	4
23			
(a)	40320	1	
(b)	14400	2	
	5P2 x 6!	B1	3
24			
(a)	1.146	2	
	$std = \sqrt{7(\frac{3}{4})(\frac{1}{4})}$	B1	
(b)	0.9987	2	
	$1 - 7C0(\frac{3}{4})^0(\frac{1}{4})^7 - 7C1(\frac{3}{4})^1(\frac{1}{4})^6$	B1	4
25			
(a)	0. 0934	1	
(b)	- 0.5	3	
	0.5	B2	
	$1 - 0.5981 - 0.0934$ [depend on (a)]	B1	4