



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

PENTAKSIRAN DIAGNOSTIK AKADEMIK SBP 2012

3472 / 1

PERCUBAAN SIJIL PELAJARAN MALAYSIA

ADDITIONAL MATHEMATICS

Kertas 1

Ogos 2012

2 jam

Dua jam

**JANGAN BUKA KERTAS SOALAN INI
SEHINGGA DIBERITAHU**

1. *Tulis 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
1	2	
2	3	
3	3	
4	3	
5	3	
6	3	
7	3	
8	4	
9	3	
10	3	
11	3	
12	3	
13	4	
14	3	
15	3	
16	3	
17	3	
18	3	
19	3	
20	3	
21	4	
22	4	
23	3	
24	4	
25	4	
TOTAL	80	

Kertas soalan ini mengandungi **26** halaman bercetak

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HALAMAN KOSONG

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

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

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

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

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

4 Area under a curve

$$= \int_a^b y \, dx \quad \text{or}$$

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

5 Volume generated

$$= \int_a^b \pi y^2 \, dx \quad \text{or}$$

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

GEOMETRY

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

2 Midpoint

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

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

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

5 A point dividing a segment of a line

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

6 Area of triangle

$$= \frac{1}{2} |(x_1 y_2 + x_2 y_3 + x_3 y_1) - (x_2 y_1 + x_3 y_2 + x_1 y_3)|$$

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STATISTIC

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

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

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

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

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

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

$$7 \quad \bar{I} = \frac{\sum w_1 I_1}{\sum w_1}$$

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

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

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

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

$$12 \quad \text{Mean } \mu = np$$

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

$$14 \quad z = \frac{x - \mu}{\sigma}$$

TRIGONOMETRY

$$1 \quad \text{Arc length, } s = r\theta$$

$$2 \quad \text{Area of sector, } L = \frac{1}{2} r^2 \theta$$

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

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

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

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

$$7 \quad \begin{aligned} \cos 2A &= \cos^2 A - \sin^2 A \\ &= 2 \cos^2 A - 1 \\ &= 1 - 2 \sin^2 A \end{aligned}$$

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

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

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

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

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

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

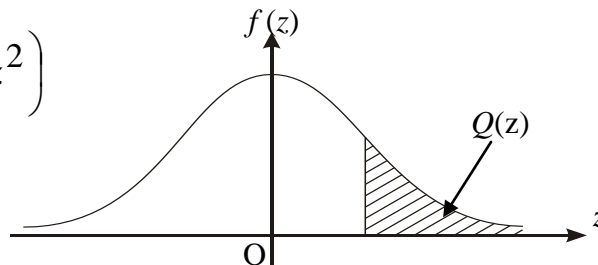
$$14 \quad \text{Area of triangle} = \frac{1}{2} ab \sin C$$

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	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	0.0307	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	0.00964	0.00939	0.00914				3	5	8	10	13	15	18	20	23
								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 $P(X > k) = Q(k)$
 Jika $X \sim N(0, 1)$, maka $P(X > k) = Q(k)$

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

1. Given that set $P = \{16, 25, 81, 100\}$ and set $Q = \{-4, -3, 4, 5, 9, 10\}$. The relation from set P to set Q is “the square root of”.

Diberi set $P = \{16, 25, 81, 100\}$ dan set $Q = \{-4, -3, 4, 5, 9, 10\}$. Hubungan antara set P kepada set Q adalah “punca kuasa dua bagi”.

State,
Nyatakan,

- (a) the object of 5
objek bagi 5
- (b) the image of 16
imej bagi 16

[2 marks]

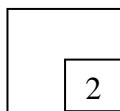
[2 markah]

Answer/Jawapan :

(a)

(b)

1



2. Given that the function $k : x \rightarrow \frac{3x}{x-2}, x \neq m$.

Diberi fungsi $k : x \rightarrow \frac{3x}{x-2}, x \neq m$.

Find

Cari

- (a) the value of m
nilai bagi m
- (b) $k^{-1}(2)$.

[3 marks]

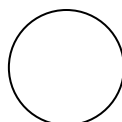
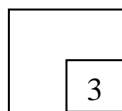
[3 markah]

Answer/Jawapan :

(a)

(b)

2



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3. Given that the function $g : x \rightarrow \frac{5}{x}, x \neq 0$ and $gf : x \rightarrow \frac{5}{x-3}, x \neq 3$.

Diberi fungsi $g : x \rightarrow \frac{5}{x}, x \neq 0$ dan $gf : x \rightarrow \frac{5}{x-3}, x \neq 3$.

Find

Cari

- (a) the function $f(x)$

fungsi bagi $f(x)$

- (b) $f(2)$

[3 marks]

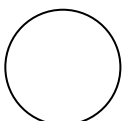
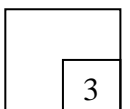
[3 markah]

Answer/Jawapan :

- (a)

- (b)

3



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4. Find the range of values of m if the quadratic equation $3 - 2x - mx^2 = -2x^2 + 4x$ has no roots.

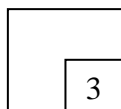
Cari julat bagi nilai m jika persamaan kuadratik $3 - 2x - mx^2 = -2x^2 + 4x$ tidak mempunyai punca.

[3 marks]

[3 markah]

Answer/Jawapan :

4



5. Find the range of values of p for $2p^2 - p \leq p^2 - 2(2p + 1)$.

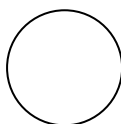
Cari julat nilai p bagi $2p^2 - p \leq p^2 - 2(2p + 1)$.

[3 marks]

[3 markah]

Answer/Jawapan :

5



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6. Diagram 6 shows the graph of a quadratic function for $f(x) = (x + m)^2 - 4$.

Rajah 6 menunjukkan graf fungsi kuadratik bagi $f(x) = (x + m)^2 - 4$.

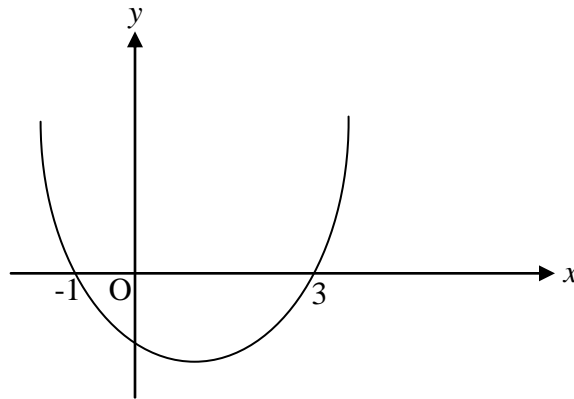


Diagram 6
Rajah 6

Find

Cari

- (a) the equation of the axis of symmetry,
persamaan paksi simetri,
- (b) the value of m ,
nilai m ,
- (c) the coordinates of the minimum point.
koordinat bagi titik minimum.

[3 marks]

[3 markah]

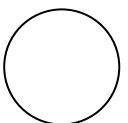
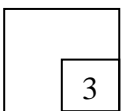
Answer/Jawapan :

(a)

(b)

(c)

6



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7. Solve the equation $\sqrt{9^{2x-3}} = 243(27^{2x})$.

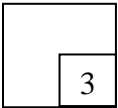
Selesaikan persamaan $\sqrt{9^{2x-3}} = 243(27^{2x})$.

[3 marks]

[3 markah]

Answer/Jawapan :

7



8. Given that $\log_5 m - \log_{125} n = 4$, express m in terms of n .

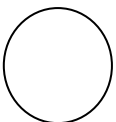
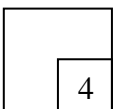
Diberi $\log_5 m - \log_{125} n = 4$, ungkapkan m dalam sebutan n .

[4 marks]

[4 markah]

Answer/Jawapan :

8



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9. It is given that $-7, h, k, 20, \dots$ are the first four terms of an arithmetic progression.

Diberi bahawa $-7, h, k, 20, \dots$ adalah empat sebutan pertama bagi suatu jangjang aritmetik.

Find the value of h and of k .

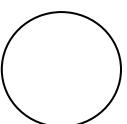
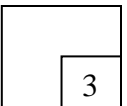
Cari nilai bagi h dan bagi k .

[3 marks]

[3 markah]

Answer/Jawapan :

9



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10

In a geometric progression, the first term is $\frac{1}{2}$ and the fourth term is $-\frac{4}{27}$.

Dalam satu jangjang geometri, sebutan pertama ialah $\frac{1}{2}$ dan sebutan keempat ialah $-\frac{4}{27}$.

Calculate,

Hitung,

(a) the common ratio,
nisbah sepunya,

(b) the sum to infinity of the geometric progression.
hasil tambah hingga sebutan ketakterhinggaan bagi jangjang geometri itu.

[3 marks]

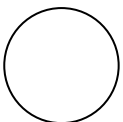
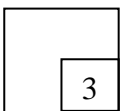
[3 markah]

Answer/Jawapan :

(a)

(b)

10



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- 11 The first three terms of an arithmetic progression are
Tiga sebutan pertama suatu jangjang aritmetik ialah

$$3h + 1, 4h + 2, 5h + 3, \dots$$

Find the sum of the first tenth terms in terms of h .

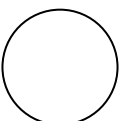
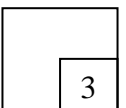
Cari hasitambah sepuluh sebutan pertama dalam sebutan h .

[3 marks]

[3 markah]

Answer/Jawapan :

11



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use only

- 12 The variables x and y are related by the equation $y = pq + px$, where p and q are constants. Diagram 12 shows the straight line obtained by plotting $\frac{y}{x}$ against $\frac{1}{x}$.

Pembolehubah x dan y dihubungkan oleh persamaan $y = pq + px$, dengan keadaan p dan q adalah pemalar. Rajah 12 menunjukkan graf garislurus diperolehi dengan memplotkan $\frac{y}{x}$ melawan $\frac{1}{x}$.

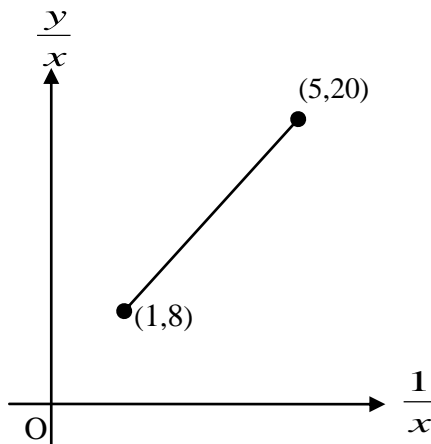


Diagram 12

Rajah 12

- (a) Express p in terms of q .
Ungkapkan p dalam sebutan q .
- (b) Find the y -intercept.
Cari pintasan- y .

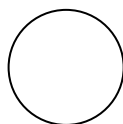
[3 marks]
[3 markah]

Answer/Jawapan :

(a)

(b)

12



SULIT

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13. Given that the straight line $\frac{x}{3} + \frac{y}{2} = 1$ intersect the x -axis at point S and intersect the y -axis at point T .

Diberi bahawa persamaan garis lurus $\frac{x}{3} + \frac{y}{2} = 1$ menyilang paksi- x di titik S dan menyilang di paksi- y di titik T .

Find the equation of the perpendicular bisector of ST .

Cari persamaan pembahagi dua sama seranjang bagi ST .

[4 marks]

[4 markah]

Answer/Jawapan :

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13

4

14. A point S moves along the arc of a circle with centre $P(-2,2)$. The arc of circle passes through point $Q(6,-4)$.

Titik S bergerak pada lengkok suatu bulatan berpusat $P(-2,2)$. Lengkok bulatan itu melalui titik $Q(6,-4)$.

Find the equation of the locus of point S .

Cari persamaan lokus bagi titik S .

[3 marks]

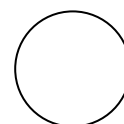
[3 markah]

Answer/Jawapan :

14

3

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15. Diagram 15 shows the vector \overrightarrow{OR} .
Rajah 15 menunjukkan vektor \overrightarrow{OR} .

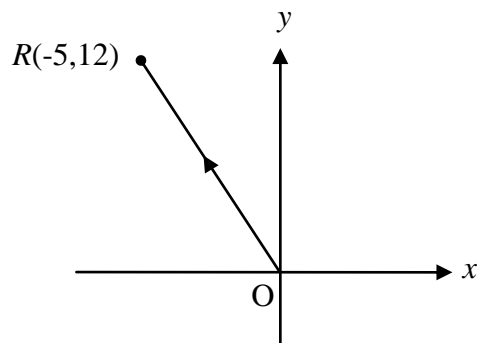


Diagram 15

Rajah 15

- (a) Express \overrightarrow{OR} in the form $x\mathbf{i} + y\mathbf{j}$.
Ungkapkan \overrightarrow{OR} dalam sebutan $x\mathbf{i} + y\mathbf{j}$.
- (b) Find the unit vector in the direction of \overrightarrow{OR} .
Cari vektor unit dalam arah \overrightarrow{OR} .

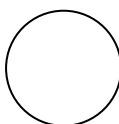
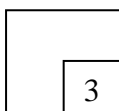
[3 marks]
[3 markah]

Answer/Jawapan :

(a)

(b)

15



SULIT

3472/1

16. Given that $\overrightarrow{OP} = \underline{i} + \underline{j}$ and $\overrightarrow{OQ} = 3\underline{i} - 2\underline{j}$.

Diberi $\overrightarrow{OP} = \underline{i} + \underline{j}$ dan $\overrightarrow{OQ} = 3\underline{i} - 2\underline{j}$.

Find the value of k if $4k\overrightarrow{OP} + \overrightarrow{OQ}$ is parallel to the y-axis.

Cari nilai k jika $4k\overrightarrow{OP} + \overrightarrow{OQ}$ selari dengan paksi-y.

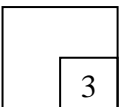
[3 marks]

[3 markah]

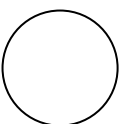
Answer/Jawapan :

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examiner's
use only

16



3



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examiner's
use only

SULIT

3472/1

17. Diagram 17 shows a right angle triangle POR and a sector ROS in a circle with centre R .

Rajah 17 menunjukkan segitiga bersudut tegak POR dan sektor ROS dalam bulatan yang berpusat R .

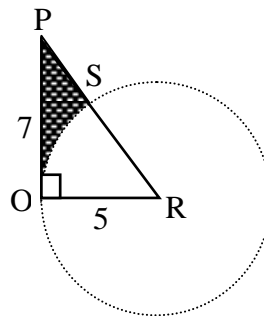


Diagram 17
Rajah 17

Find,
Cari,

[Use/Guna $\pi = 3.142$]

- (a) $\angle ORS$, in radian,
 $\angle ORS$, dalam radian,
- (b) perimeter of shaded region.
perimeter kawasan berlorek.

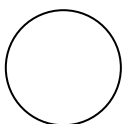
[3 marks]
[3 markah]

Answer/Jawapan :

(a)

(b)

17



SULIT

3472/1

18. Solve the trigonometry equation $4\sin x \cos x = 1$ for $0^\circ \leq x \leq 360^\circ$.

Selesaikan persamaan trigonometri $4\sin x \cos x = 1$ untuk $0^\circ \leq x \leq 360^\circ$.

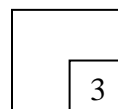
[3 marks]

[3 markah]

Answer/Jawapan :

For
examiner's
use only

18



19. Given $y = 16x(5 - x)$.

Diberi $y = 16x(5 - x)$.

Find

Cari

(a) $\frac{dy}{dx}$

- (b) the value of x when y is maximum.

nilai x apabila y adalah maksimum.

[3 marks]

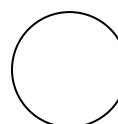
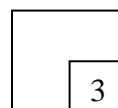
[3 markah]

Answer/Jawapan :

(a)

(b)

19



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3472/1

For
examiner's
use only

20. Given that the point $M\left(-1, \frac{3}{2}\right)$ lies on a curve with gradient function $x - 3$.

Diberi bahawa titik $M\left(-1, \frac{3}{2}\right)$ berada pada suatu lengkung dengan fungsi kecerunan $x - 3$.

Find the equation of the tangent at point M .

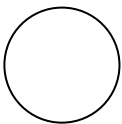
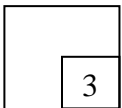
Cari persamaan tangen pada titik M .

[3 marks]

[3 markah]

Answer/Jawapan :

20



SULIT

3472/1

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examiner's
use only

21. Given that $\int_1^3 f(x)dx = 5$.

Diberi bahawa $\int_1^3 f(x)dx = 5$.

Find,
Cari,

(a) the value of $\int_3^1 2f(x)dx$,

nilai bagi $\int_3^1 2f(x)dx$,

(b) the value of h if $\int_1^3 [h - \frac{f(x)}{2}]dx = \frac{7}{2}$.

nilai h jika $\int_1^3 [h - \frac{f(x)}{2}]dx = \frac{7}{2}$.

[4 marks]

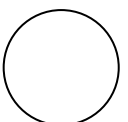
[4 markah]

Answer/Jawapan :

(a)

(b)

21



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3472/1

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22. Table 22 shows a cumulative frequency for 20 teams and the score obtained from a game.

Jadual 22 menunjukkan kekerapan longgokan bagi 20 pasukan dan mata yang diperoleh daripada suatu permainan.

Score Mata	0	1	2	3	4
Cumulative frequency Kekerapan longgokan	2	5	7	15	20

Table 22

Jadual 22

Find

Cari,

- (a) the value of median,
nilai bagi median,
- (b) variance, for the score.
varians, bagi mata yang diperoleh.

[4 marks]

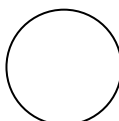
[4 markah]

Answer/Jawapan :

(a)

(b)

22



23. A team consists of 5 students are to be chosen from 4 girls and 6 boys.
Satu pasukan terdiri daripada 5 orang pelajar hendak dipilih daripada 4 orang pelajar perempuan dan 6 orang pelajar lelaki.

Find the number of ways the team can be formed if
Cari bilangan cara pasukan itu boleh dibentuk jika

- (a) there is no restriction,
tiada syarat dikenakan,
- (b) a minimum of 3 girls must be chosen.
minimum 3 orang pelajar perempuan mesti dipilih.

[3 marks]
 [3 markah]

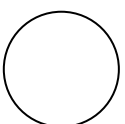
Answer/Jawapan :

(a)

(b)

For
 examiner's
 use only

23



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For
examiner's
use only

24. In a selection to represent the school for the mathematics competition, the probability that Ramon, Ailing and Suzana is chosen are $\frac{2}{5}$, $\frac{3}{4}$ and $\frac{2}{3}$ respectively.

Dalam satu pemilihan untuk mewakili sekolah bagi suatu pertandingan matematik, kebarangkalian bahawa Ramon, Ailing dan Suzana terpilih adalah $\frac{2}{5}$, $\frac{3}{4}$ dan $\frac{2}{3}$ masing-masing.

Find the probability that

Cari kebarangkalian bahawa

- (a) only Suzana is chosen,
hanya Suzana yang terpilih,
- (b) at least one of them is chosen.
sekurang-kurangnya seorang daripada mereka terpilih.

[4 marks]

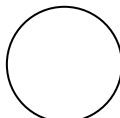
[4 markah]

Answer/Jawapan :

(a)

(b)

24



SULIT

3472/1

25. Diagram 25 shows a normal distribution graph.

Rajah 25 menunjukkan graf taburan normal.

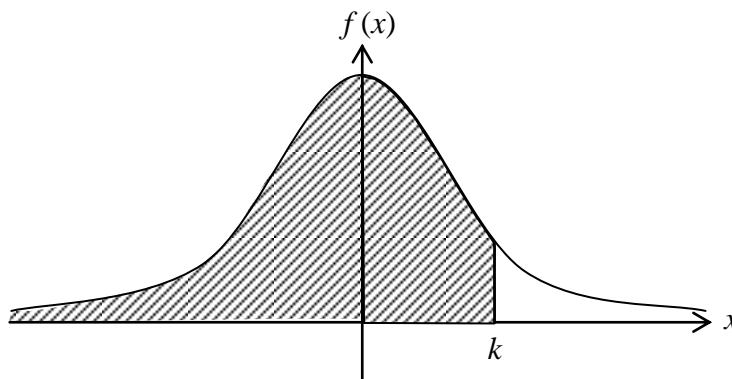


Diagram 25

Rajah 25

Given that the area of the shaded region is 0.8259.

Diberi bahawa luas kawasan berlorek adalah 0.8259.

- (a) Find the value of $P(x > k)$.

Nilai bagi $P(x > k)$.

- (b) X is a continuous random variable which is normally distributed with a mean of 45 and a standard deviation of 5 .

X adalah pembolehubah rawak selanjar yang tertabur secara normal dengan min 45 dan sisihan piawai 5.

Find the value of k .

Cari nilai k .

[4 marks]

[4 markah]

Answer/Jawapan :

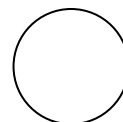
(a)

(b)

END OF QUESTION PAPER
KERTAS SOALAN TAMAT

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25



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 the question paper.
Tulis jawapan anda dalam ruang yang disediakan dalam kertas soalan.
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 answer 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. A list of formulae is provided on pages 3 to 5.
Satu senarai rumus disediakan di halaman 3 hingga 5.
9. A booklet of four-figure mathematical tables is provided.
Sebuah buku sifir matematik empat angka disediakan.
10. You may use a non-programmable scientific calculator.
Anda dibenarkan menggunakan kalkulator saintifik yang tidak boleh diprogram.
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.