

Name :

Form :



KEMENTERIAN
PENDIDIKAN
MALAYSIA

BAHAGIAN PENGURUSAN SEKOLAH BERASRAMA PENUH
DAN SEKOLAH KECEMERLANGAN

**PENTAKSIRAN DIAGNOSTIK AKADEMIK SBP 2014
PERCUBAAN SIJIL PELAJARAN MALAYSIA**

ADDITIONAL MATHEMATICS

Kertas 1

1 jam 15 minit

**JANGAN BUKA KERTAS SOALAN INI
SEHINGGA DIBERITAHU**

1. *Tulis nama dan tingkatan anda pada ruang 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	4	
12	3	
13	3	
14	4	
15	2	
16	4	
17	4	
18	3	
19	3	
20	3	
21	3	
22	3	
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

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

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

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

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

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

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

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

$$8 \quad \log_a b : \log_a h$$

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

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

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

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

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

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 =

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

[Lihat halaman sebelah

STATISTIC

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

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

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

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

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

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

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

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

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

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

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

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

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

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

TRIGONOMETRY

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

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

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

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

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

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

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

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

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

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

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

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

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

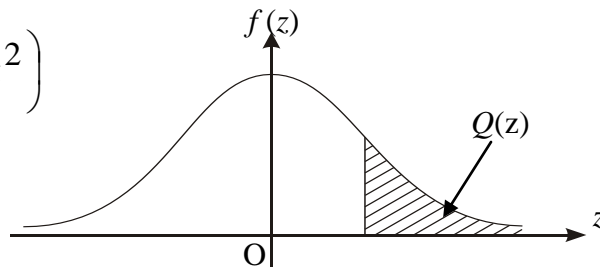
$$14 \quad \text{Area of triangle} = \frac{1}{2} ab \sin C$$

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								
											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	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

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

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



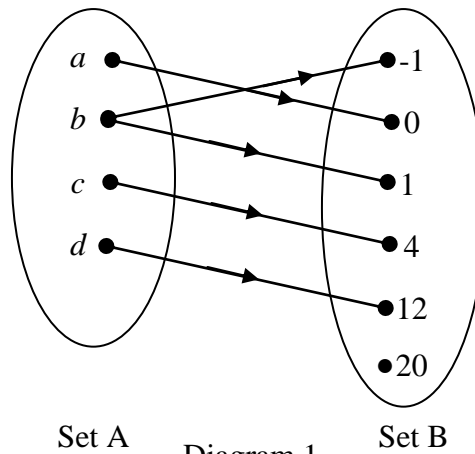
Example / Contoh:

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

For
Examiner's
Use

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

1. Diagram 1 shows the relation between set A and set B.
Rajah 1 menunjukkan hubungan antara set A dan set B.



- (a) State the range of the relation.
Nyatakan julat bagi hubungan itu.
- (b) The relation is not a function. Give your reason.
Hubungan itu bukan suatu fungsi. Beri sebab anda.

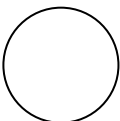
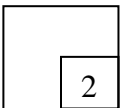
[2 marks]
[2 markah]

Answer/Jawapan :

(a)

(b)

1



2. The function h is defined as $h^{-1}(x) = \frac{7x}{x-3}, x \neq m$.

Fungsi h ditakrifkan oleh $h^{-1}(x) = \frac{7x}{x-3}, x \neq m$.

Find

Cari

- (a) the value of m
nilai bagi m

- (b) $h(6)$

[3 marks]
[3 markah]

Answer/Jawapan :

- (a)

- (b)

2

3

- 3 The following information refers to the functions g and fg .
Maklumat berikut adalah berkaitan dengan fungsi g dan fg .

$$g(x) = 3x - 1$$

$$fg(x) = 6x + 8$$

Find $f(x)$.

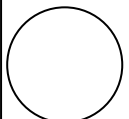
Cari $f(x)$.

[3 marks]
[3 markah]

Answer/Jawapan :

3

3



For
Examiner's
Use

4. Given that m and n are the roots of quadratic equations $x^2 + 6x + 7 = 0$, form the quadratic equation which has the roots $4m$ and $4n$.

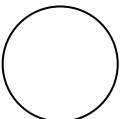
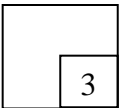
Diberi bahawa m dan n adalah punca-punca bagi persamaan kuadratik $x^2 + 6x + 7 = 0$, bentukkan persamaan kuadratik yang mempunyai punca-punca $4m$ dan $4n$.

[3 marks]

[3 markah]

Answer/Jawapan :

4



5. Diagram 5 shows the graph of quadratic function $f(x) = -\frac{1}{3}[(x+p)^2 + q]$

The straight line $y = 3$ is a tangent to the curve.

Rajah 5 menunjukkan suatu graf fungsi kuadratik $f(x) = -\frac{1}{3}[(x+p)^2 + q]$

Garislurus $y = 3$ ialah tangen kepada lengkung tersebut.

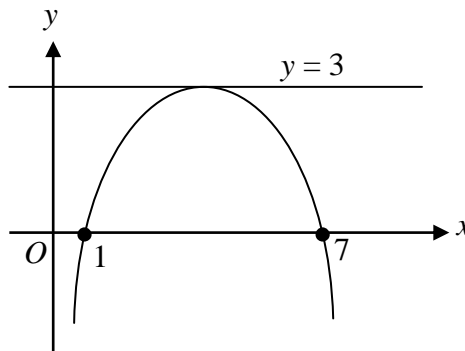


Diagram 5
Rajah 5

Calculate the value of p and of q .

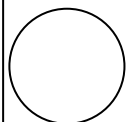
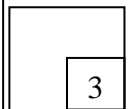
Hitung nilai bagi p dan bagi q .

[3 marks]

[3 markah]

Answer/Jawapan :

5



For
Examiner's
Use

- 6 Given that $h(x) = 10 - x - 2x^2$.
Find the range of values of x for $h(x) \geq 4$.

*Diberi bahawa $h(x) = 10 - x - 2x^2$.
Cari julat nilai-nilai x untuk $h(x) \geq 4$.*

[3 marks]
[3 markah]

Answer/Jawapan :

6

3

7. Given that $4(2^{p+1}) = \left(\frac{1}{8}\right)^{2p+6}$, find the value of p .

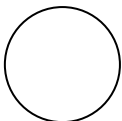
Diberi $4(2^{p+1}) = \left(\frac{1}{8}\right)^{2p+6}$, cari nilai p .

[3 marks]
[3 markah]

Answer/Jawapan :

7

3



8. Solve the equation
Selesaikan persamaan

$$\log_3(2x-5) = \log_{27}(x+1)^3$$

[4 marks]

[4 markah]

Answer/Jawapan :

8

8
4

9. If the n^{th} term of an arithmetic progression is $4n + 3$, find the sum of the first 20 terms.
Jika sebutan ke- n bagi suatu jangjang aritmetik adalah $4n + 3$, cari hasil tambah 20 sebutan pertama.

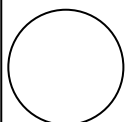
[3 marks]

[3 markah]

Answer/Jawapan :

9

9
3



- 10 In the year 2013 the price of a hand phone decrease 5% each month. Diagram 10 shows the price of a hand phone in January 2013.
Pada tahun 2013 harga sebuah telefon bimbit menyusut 5% setiap bulan. Rajah 10 menunjukkan harga sebuah telefon bimbit pada bulan Januari tahun 2013.



Diagram 10
Rajah 10

David bought a new hand phone a day before Christmas for his mother.
David telah membeli sebuah telefon bimbit baru sehari sebelum Hari Natal untuk dihadiahkan kepada ibunya.

How much David pay for the new handphone?

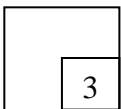
Berapakah harga yang telah dibayar oleh David untuk membeli telefon baru tersebut?

[3 marks]

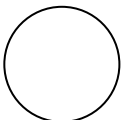
[3 markah]

Answer/Jawapan :

10



3



- 11 The sum of the first 8 terms of an arithmetic progression is 192 and the sum of the next 8 terms is 448.

Hasiltambah 8 sebutan pertama bagi suatu jantang aritmetik adalah 192 dan hasiltambah 8 sebutan yang berikutnya adalah 448.

Calculate the values of the first term and the common different.

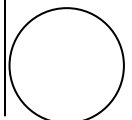
Hitung sebutan pertama dan beza sepunya.

[4 marks]

[4 markah]

Answer/Jawapan :

11



For
Examiner's
Use

- 12 Diagram 12 shows a straight line graph of $\frac{1}{y}$ against $\frac{1}{x}$.

Express y in terms of x .

Rajah 12 menunjukkan graf garislurus $\frac{1}{y}$ melawan $\frac{1}{x}$.

Ungkapkan y dalam sebutan x .

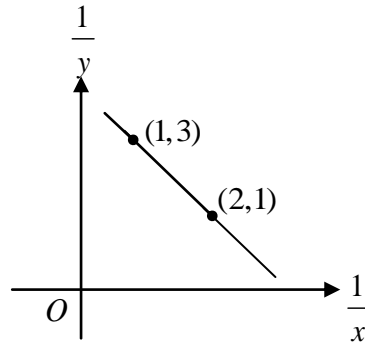
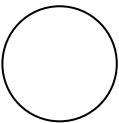


Diagram 12
Rajah 12

Answer/Jawapan :

[3 marks]
[3 markah]

12



13.

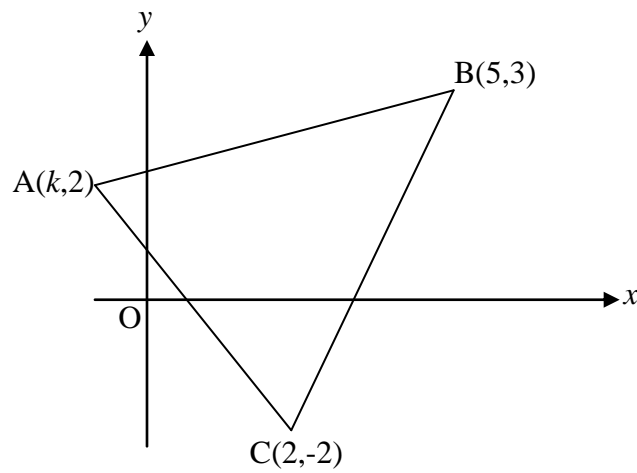


Diagram 13

Rajah 13

Diagram 13 shows the triangle ABC . Given that the area of the triangle is 13.5 unit^2 , find the value of k .

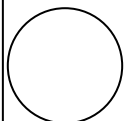
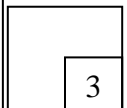
Rajah 13 menunjukkan segitiga ABC. Diberi luas segitiga itu ialah 13.5 unit^2 , cari nilai bagi k .

[3 marks]

[3 markah]

Answer/Jawapan:

13



For
Examiner's
Use

14. Given that $M(6,4)$ is the midpoint of the line segment that joins the point $P(4,8)$ and point R . Find the equation of the straight line that passes through the point R and is perpendicular to the straight line PR .

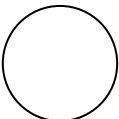
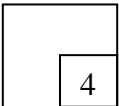
Diberi bahawa $M(6,4)$ adalah titik tengah tembereng garis yang menghubungkan titik $P(4,8)$ dan titik R . Cari persamaan garislurus yang melalui titik R dan berserenjang dengan garislurus PR .

[4 marks]

[4 markah]

Answer/Jawapan :

14



15. Diagram 15 shows the vector \overrightarrow{OP} , \overrightarrow{OR} and \overrightarrow{OQ} drawn on a grid of equal squares with sides of 1 unit.

Rajah 15 menunjukkan vector \overrightarrow{OP} , \overrightarrow{OR} dan \overrightarrow{OQ} dilukis pada grid segiempat sama yang sama besar bersisi 1 unit.

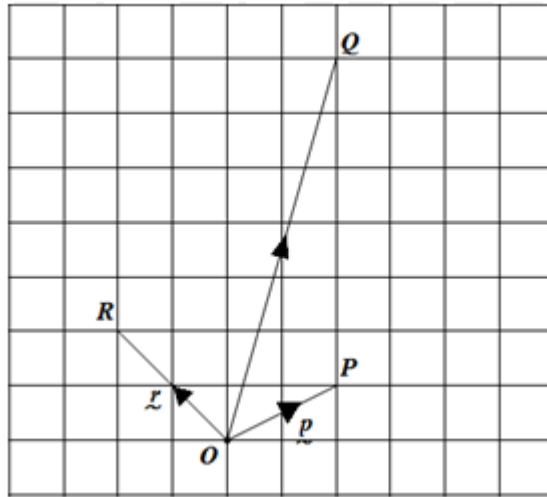


Diagram 15
Rajah 15

Determine
Tentukan

- (a) \overrightarrow{OQ} in terms of \underline{p} and \underline{r} .
(b) $|\overrightarrow{OQ}|$

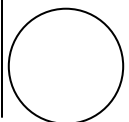
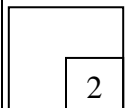
[2 marks]
[2 markah]

Answer/Jawapan :

(a)

(b)

15



For
Examiner's
Use

16. It is given that $\underline{a} = \begin{pmatrix} 1 \\ 3 \end{pmatrix}$ and $\underline{b} = \begin{pmatrix} 2 \\ h+1 \end{pmatrix}$. If \underline{a} is parallel to \underline{b} , find

Diberi bahawa $\underline{a} = \begin{pmatrix} 1 \\ 3 \end{pmatrix}$ dan $\underline{b} = \begin{pmatrix} 2 \\ h+1 \end{pmatrix}$. Jika \underline{a} selari dengan \underline{b} , cari

- (a) the value of h
nilai bagi h
- (b) the unit vector in the direction of \underline{b} .
vector unit dalam arah \underline{b} .

[4 marks]

[4 markah]

Answer/Jawapan :

(a)

(b)

17.

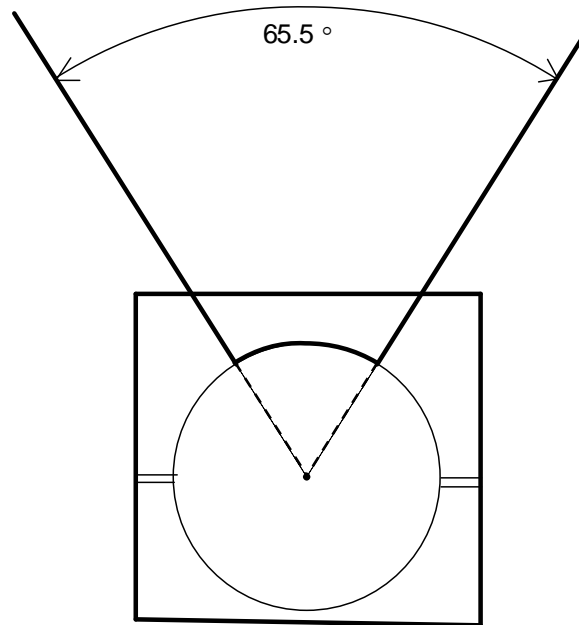


Diagram 17
Rajah 17

Diagram 17 shows shot pull field dimension for high school. For category A, student must throw 5 m far from centre to get 1 point and 7 m far from centre for 3 points. Find the area, in m^2 for 1 point.

Rajah 17 menunjukkan dimensi ukuran padang lontar peluru bagi sekolah menengah. Bagi kategori A, pelajar mesti mendapat jarak 5 m dari pusat balingan untuk 1 mata dan 7 m dari pusat balingan untuk 3 mata. Cari luas kawasan, dalam m^2 , untuk 1 mata.

[4 marks]
[4 markah]

Answer/Jawapan :



For
Examiner's
Use

18. Given $\sin \theta = \sqrt{1-h^2}$ and θ is obtuse angle.
Diberi $\sin \theta = \sqrt{1-h^2}$ dan θ ialah sudut cakah.

Find

Cari

(a) $\cot \theta$

(b) $\sin 2\theta$

[3 marks]

[3 markah]

Answer/Jawapan :

(a)

(b)

18

3

19. Given $y = \frac{3x^2 - 4}{x}$ and $\frac{dy}{dx} = 3h(x)$, find $\int_{-2}^1 h(x) dx$

Diberi $y = \frac{3x^2 - 4}{x}$ dan $\frac{dy}{dx} = 3h(x)$, cari $\int_{-2}^1 h(x) dx$

[3 marks]

[3 markah]

Answer/Jawapan :

19

3

20. Given $y = 3x^2 - 4x + 5$, find
Diberi $y = 3x^2 - 4x + 5$, cari

- (a) the value of x when y is minimum.
nilai x apabila nilai y adalah minimum
- (b) the minimum value of y .
nilai minimum bagi y .

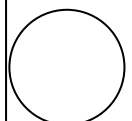
[3 marks]
[3 markah]

Answer/Jawapan :

(a)

(b)

20



For
Examiner's
Use

21. Given that $\int_1^3 h(x) dx = 5$, find the value of k , if $\int_1^3 kx dx - \int_3^1 2h(x) dx = 18$

Diberi bahawa $\int_1^3 h(x) dx = 5$, cari nilai k , jika $\int_1^3 kx dx - \int_3^1 2h(x) dx = 18$

[3 marks]

[3 markah]

Answer/Jawapan :

21

3

22. The mean and standard deviation of five numbers are 6 and 3 respectively.

Min dan sisihan piawai bagi lima nombor adalah 6 dan 3 masing-masing.

Find

Cari

(a) the sum of squares of the numbers.

hasil tambah kuasadua bagi nombor-nombor tersebut.

(b) the new value of variance if every number is multiplied by 2 and then 3 is added to it.

nilai varian yang baru jika setiap nombor didarab dengan 2 dan kemudian 3 ditambah kepadanya.

[3 marks]

[3 markah]

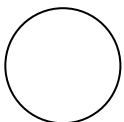
Answer/Jawapan :

(a)

22

3

(b)



23. En. Lee has a pets shop. He want to display five cages with different pets as shown in Diagram 23.

En. Lee mempunyai sebuah kedai binatang peliharaan. Di hadapan kedainya dipamerkan lima sangkar yang diisi dengan haiwan yang berbeza seperti pada Rajah 23.

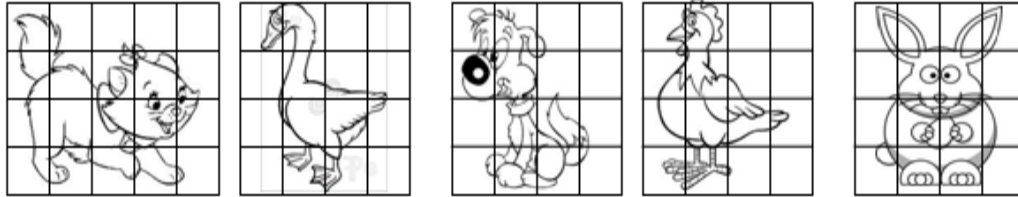


Diagram 23
Rajah 23

Cat and dog cage's cannot be side by side.

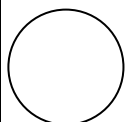
Sangkar anjing dan sangkar kucing tidak boleh bersebelahan.

How many ways to arrange the cages?

Berapakah bilangan cara untuk menyusun sangkar-sangkar tersebut?

[3 marks]
[3 markah]

Answer/Jawapan :



24. Table 24 shows the number of Mathematics and Science books in two racks, P and Q .

Jadual 24 menunjukkan bilangan buku Matematik dan buku Sains di atas dua rak iaitu P dan Q .

Rack <i>Rak</i>	Mathematics book <i>Buku Matematik</i>	Sciences book <i>Buku Sains</i>
P	3	h
Q	5	8

Table 24
Jadual 24

- (a) A book is chosen at random from rack P . The probability of choosing Science book is $\frac{4}{5}$.

Find the value of h .

[2 marks]

Sebuah buku dipilih secara rawak daripada rak P . Kebarangkalian untuk memilih buku Sains ialah $\frac{4}{5}$.

Cari nilai h .

[2 markah]

- (b) Two books are chosen at random among Mathematics book. Find the probability that both books are from the same rack.

[2 marks]

Dua buah buku dipilih secara rawak di kalangan buku Matematik.

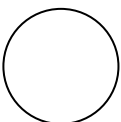
Cari kebarangkalian bahawa kedua-dua buah buku adalah daripada rak yang sama.

[2 markah]

Answer/Jawapan :

(a)

(b)



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

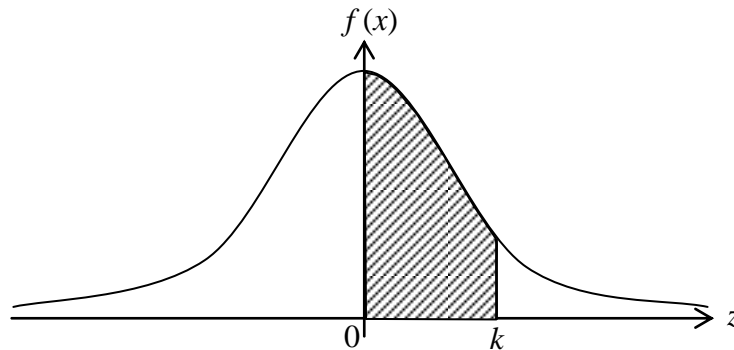


Diagram 25
Rajah 25

It is given that the area of shaded region is 0.3494.

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

Cari nilai $P(z > k)$.

[1 marks]

[1 markah]

- (b) X is a continuous random variable which is normally distributed with a mean of μ and a standard deviation of 3.5.

If the value of X is 56 and the z -score is k , find the value of μ .

X ialah pembolehubah rawak yang bertabur secara normal dengan min, μ dan sisihan piawai 3.5.

Jika nilai X ialah 56 dan skor- z ialah k , cari nilai μ .

[3 marks]

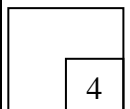
[3 markah]

Answer/Jawapan :

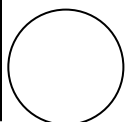
(a)

(b)

25



END OF QUESTION PAPER
KERTAS SOALAN TAMAT



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. You may use a non-programmable scientific calculator.
Anda dibenarkan menggunakan kalkulator saintifik yang tidak boleh diprogram.
10. Hand in this question paper to the invigilator at the end of the examination.
Serahkan kertas soalan ini kepada pengawas peperiksaan di akhir peperiksaan.