

SULIT

3472 / 1

SULIT

3472/1

Matematik Tambahan

Kertas 1

Oktober

2 Jam

Nama :

Ting. :

**PEPERIKSAAN PERCUBAAN SPM 2020
TINGKATAN 5**

JANGAN BUKA KERTAS SOALAN INI SEHINGGA DIBERITAHU

1. Tulis **nama** dan **tingkatan** anda pada ruang yang disediakan di atas.
2. Kertas soalan ini adalah dalam dwibahasa.
3. Soalan dalam bahasa Inggeris mendahului soalan yang sama dalam bahasa Melayu.
4. Calon dibenarkan menjawab keseluruhan atau sebahagian soalan dalam bahasa Inggeris atau bahasa Malaysia.

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

Kertas soalan ini mengandungi 22 halaman bercetak.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

CALCULUS (KALKULUS)

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

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

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

$$4 \quad \text{Area under a curve / Luas di bawah lengkung}$$

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

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

$$5 \quad \text{Volume generated / Isipada kisanan}$$

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

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

GEOMETRY (GEOMETRI)

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

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

$$3 \quad \text{Area of triangle/ Luas segitiga}$$

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

$$4 \quad \text{A point dividing a segment of a line}$$

Titik yang membahagi suatu tembereng garis

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

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

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

STATISTICS (STATISTIK)

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

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

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

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

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

$$6 \quad I = \frac{P_1}{P_0} \times 100$$

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

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

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

$$10 \quad P(A \text{ and } B) = P(A) + P(B) - P(A \text{ or } B)$$

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

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

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

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

TRIGONOMETRY (TRIGONOMETRI)

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

Panjang lengkok, $s = r\theta$

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

Luas sektor, $L = \frac{1}{2} r^2 \theta$

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

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

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

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

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

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

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

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

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

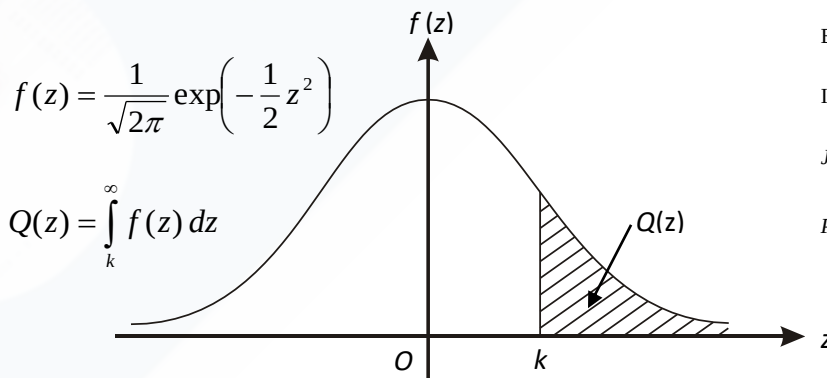
$$12 \quad \frac{a}{\sin A} = \frac{b}{\sin B} = \frac{c}{\sin C}$$

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

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

**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



Example / Contoh:

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

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

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

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

1.

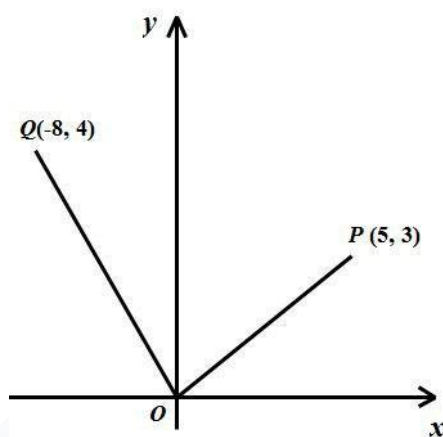


Diagram 1 / Rajah 1

Diagram 1 shows two straight line OP and OQ .

Rajah 1 menunjukkan dua garis lurus OP dan OQ .

Express

Ungkapkan

(a) vector $\overrightarrow{OP}$ in the form of $x\mathbf{i} + y\mathbf{j}$,

vektor $\overrightarrow{OP}$ dalam bentuk $x\mathbf{i} + y\mathbf{j}$,

(b) vector $\overrightarrow{QO}$ in the form $\begin{pmatrix} x \\ y \end{pmatrix}$.

vektor $\overrightarrow{QO}$ dalam bentuk $\begin{pmatrix} x \\ y \end{pmatrix}$.

[2 marks]

[2 markah]

Answer / Jawapan :

(a)

(b)

For Examiner's
Use



For Examiner's
Use

2. Diagram 2 below shows the line when $\frac{x}{y}$ against x is drawn. Determine the non-linear equation connecting y and x .

Rajah 2 di bawah menunjukkan garisan apabila $\frac{x}{y}$ melawan x dilukis. Tentukan persamaan bukan linear yang menghubungkan y dan x .

[2 marks]

[2 markah]

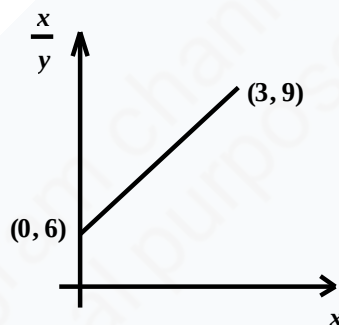


Diagram 2 / Rajah 2

Answer / Jawapan :



3. Given that the function $f(x) = rx - s$ and $f^2(x) = 9x - 5$, where r and s are constant, find the value of r and s if $r < 0$.

Diberi bahawa fungsi $f(x) = rx - s$ dan $f^2(x) = 9x - 5$, di mana r dan s adalah pemalar, cari nilai bagi r dan s jika $r < 0$.

[3 marks]

[3 markah]

Answer / Jawapan :



4. Given that $h^{-1}(x) = 7 - 3x$ and $h(x) = px + q$. Find the value of p and q .

Diberi $h^{-1}(x) = 7 - 3x$ dan $h(x) = px + q$. Cari nilai bagi p dan q .

[2 marks]

[2 markah]

Answer / Jawapan :



5. Form the quadratic equation which has the roots $\frac{2}{3}$ and $\frac{1}{4}$. Give the answer in the form $ax^2 + bx + c = 0$, where a , b dan c are constants.

Bentukkan persamaan kuadratik yang mempunyai punca-punca $\frac{2}{3}$ dan $\frac{1}{4}$. Beri jawapan dalam bentuk $ax^2 + bx + c = 0$, dengan keadaan a , b dan c ialah pemalar.

[2 marks]

[2 markah]

Answer/ Jawapan :



For Examiner's

Use

6. Given that $\log_x 8 = 3$, find the value of

Diberi bahawa $\log_x 8 = 3$, cari nilai

(a) x ,

(b) $\log_8 \left(\frac{1}{x} \right)$.

[2 marks]

[2 markah]

Answer/ Jawapan :



7.

Given $m = 5^x$ and $n = 5^y$, express $\frac{25^{x+y}}{125^{x-y}}$ in terms of m and n .

Diberi $m = 5^x$ dan $n = 5^y$, ungkapkan $\frac{25^{x+y}}{125^{x-y}}$ dalam sebutan m dan n .

[4 marks]

[4 markah]

Answer/ Jawapan :



8. Solve the equation $3^x(4^{x-1}) = 6^x$.

Selesaikan persamaan $3^x(4^{x-1}) = 6^x$.

[4 marks]

[4 markah]

Answer/ Jawapan :

For Examiner's

Use



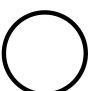
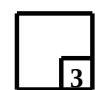
9. The vector $\begin{pmatrix} a \\ b \end{pmatrix}$ has a magnitude of 10 and is parallel to $\begin{pmatrix} 1 \\ 3 \end{pmatrix}$. Given that $b > 0$, find the value of a and of b .

Vektor $\begin{pmatrix} a \\ b \end{pmatrix}$ mempunyai magnitud 10 dan selari dengan $\begin{pmatrix} 1 \\ 3 \end{pmatrix}$. Diberi bahawa $b > 0$, cari nilai a dan nilai b .

[3 marks]

[3 markah]

Answer/ Jawapan :



For Examiner's
Use

10. Diagram 3 shows the straight line AB which is perpendicular to the straight line CB at the point B .

Rajah 3 menunjukkan garis lurus AB yang berserenjang dengan garis lurus CB pada titik B .

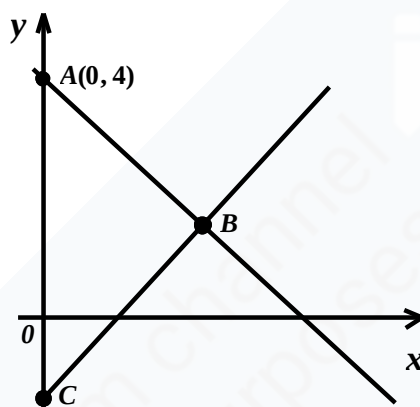


Diagram 3 / Rajah 3

The equation of the straight line CB is $y = 2x - 1$. Find the coordinates of B .

Persamaan garis lurus CB ialah $y = 2x - 1$. Cari koordinat B .

[3 marks]

[3 markah]

Answer / Jawapan :



11. In an arithmetic progression, the common difference is -5 . Given the sum of the first 10 terms of progression is 45, find

Dalam suatu jangjang aritmetik, beza sepunya ialah -5 . Diberi hasil tambah 10 sebutan pertama jangjang itu ialah 45, cari

- (a) the first term of progression,

sebutan pertama jangjang itu,

- (b) the seventh term of the progression.

sebutan ketujuh jangjang itu.

[4 marks]

[4 markah]

Answer / Jawapan :



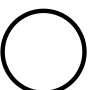
12. Given that $0.354545454\ldots$ is a recurring decimal number. Express the number as a fraction in its simplest form.

Diberi bahawa $0.354545454\ldots$ ialah nombor perpuluhan berulang. Ungkapkan nombor tersebut sebagai satu pecahan dalam sebutan terendah.

[3 marks]

[3 markah]

Answer/Jawapan :



For Examiner's

Use

13. Find a set of five possible positive integers that have mode 5, median 6 and mean 7.

Carikan satu set lima integer positif yang mempunyai mod 5, median 6 dan min 7.

[4 marks]

[4 markah]

Answer/Jawapan :



14. Table 1 shows a cumulative frequency distribution of marks for 30 students in a Mathematics test.

Jadual 1 menunjukkan taburan kekerapan longgokan bagi 30 orang murid dalam satu ujian Matematik.

Marks <i>Markah</i>	Number of students <i>Bilangan murid</i>
< 10	5
< 20	9
< 30	21
< 40	28
< 50	30

Table 1 / *Jadual 1*

En Hanif, the subject teacher, intends to give a reward to the top fifteen students. Those students who achieve the minimum mark in the top fifteen placing will be considered to receive the reward. Eric obtains 24 marks.

Does Eric qualify to be considered to receive the reward? Give yours reason.

En Hanif, guru mata pelajaran, berhasrat untuk memberi ganjaran kepada lima belas murid terbaik. Murid-murid yang mencapai markah minimum dalam kedudukan kelima belas terbaik akan dipertimbangkan untuk menerima ganjaran tersebut. Eric memperoleh 24 markah.

Adakah Eric layak dipertimbangkan untuk menerima ganjaran itu? Beri sebab anda.

[4 marks]

[4 markah]

Answer/Jawapan :



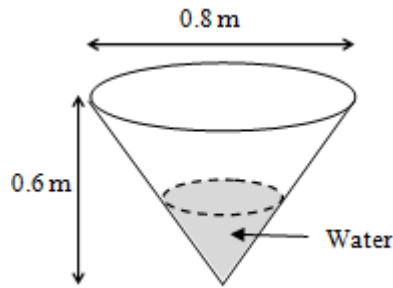


Diagram 4/ Rajah 4

Diagram 4 shows a conical container of diameter 0.8 m and height 0.6 m. Water is poured into the container at a constant rate of $p \text{ m}^3\text{s}^{-1}$. Calculate the value of p , given that the rate of change of the height of the water level is 0.1 ms^{-1} at the instant when the height of the water level is 0.27 m.

$$[\text{Volume of a cone} = \frac{1}{3}\pi r^2 h]$$

Rajah 4 menunjukkan sebuah bekas berbentuk kon berdiameter 0.8 m dan tinggi 0.6 m. Air dituangkan ke dalam bekas pada kadar tetap $p \text{ m}^3\text{s}^{-1}$. Hitung nilai p , jika kadar perubahan ketinggian paras air adalah 0.1 ms^{-1} ketika ketinggian paras air adalah 0.27 m.

$$[\text{Isipadu kon} = \frac{1}{3}\pi r^2 h]$$

[4 marks]

[4 markah]

Answer/Jawapan :



16. A curve with gradient function $16x - \frac{2}{x^2}$ has a turning point at $(2, 3)$.

Determine whether the turning point is a maximum or a minimum point.

Suatu lengkung dengan fungsi kecerunan $16x - \frac{2}{x^2}$ mempunyai titik pusingan di $(2, 3)$.

Tentukan sama ada titik pusingan itu adalah titik maksimum atau titik minimum.

[3 marks]

[3 markah]

Answer / Jawapan :



17. Given $\int_0^3 f(x) dx = 6$ and $\int_3^5 f(x) dx = 8$, find the value of

Diberi $\int_0^3 f(x) dx = 6$ dan $\int_3^5 f(x) dx = 8$, cari nilai

(a) $\int_0^5 f(x) dx$,

(b) k when $\int_0^5 [f(x) + kx] dx = 39$.

k apabila $\int_0^5 [f(x) + kx] dx = 39$.

[3 marks]

Answer / Jawapan :

[3 markah]



For Examiner's

Use

18. Solve the equation $3\cos^2 x + \sin 2x = 0$ for $0^\circ \leq x \leq 360^\circ$

Selesaikan persamaan $3\cos^2 x + \sin 2x = 0$ bagi $0^\circ \leq x \leq 360^\circ$

[3 marks]

[3 markah]

Answer / Jawapan :



19. Given that $\sin \theta = q$, where q is a constant and $90^\circ \leq \theta \leq 180^\circ$.

Diberi $\sin \theta = q$, di mana q adalah pemalar dan $90^\circ \leq \theta \leq 180^\circ$.

Find in terms of q

Cari dalam sebutan q

(a) cosec θ ,

kosec θ ,

(b) $\sin 2\theta$.

[4 marks]

[4 markah]

Answer / Jawapan :



20. Diagram 5 shows a sector OPQ of a circle with centre O , and a sector JKL of a circle with centre J .

Rajah 5 menunjukkan sector OPQ bagi sebuah bulatan berpusat O dan sector JKL bagi sebuah bulatan berpusat J .

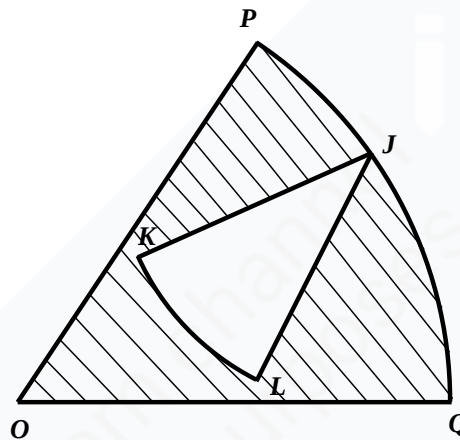


Diagram 5 / Rajah 5

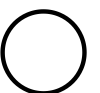
Given $PO = 10$ cm, $KJ = 8$ cm, $\angle POQ = 1.5$ radian and $\angle KJL = 0.5$ radian, find the area, in cm^2 , of shaded region.

Diberi $PO = 10$ cm, $KJ = 8$ cm, $\angle POQ = 1.5$ radian dan $\angle KJL = 0.5$ radian, cari luas, dalam cm^2 , kawasan berlorek.

[3 marks]

[3 markah]

Answer/ Jawapan :



21. Diagram 6 shows circle-shaped dart board with a common centre. The bigger circle has a radius of $4x$ cm and the smaller circle has a radius of x cm. Assume that every time when a dart is thrown, it will hit either the bigger circle or the smaller circle.
- Rajah 6 menunjukkan papan balingan dart berbentuk bulatan sepusat. Jejari bulatan yang lebih besar ialah $4x$ cm dan jejari bulatan yang lebih kecil ialah x cm. Anggapkan apabila setiap kali satu dart dilemparkan, dart itu akan terkena sama ada bulatan besar atau bulatan kecil.*

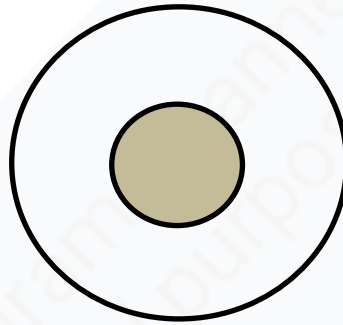


Diagram 6 / Rajah 6

- (a) What is the probability that when Ahmad throws a dart, the dart will hit the region within the smaller circle?

Apakah kebarangkalian apabila Ahmad melemparkan satu dart dan dart itu terkena kawasan dalam bulatan kecil?

- (b) Ahmad is not satisfied with that probability. How should he increase the probability of hitting in the shaded area? Justify your answer.

Ahmad tidak berpuas hati dengan kebarangkalian itu. Bagaimanakah cara untuk dia meningkatkan kebarangkalian itu kena pada kawasan yang berlorek? Jelaskan jawapan anda.

[4 marks]

[4 markah]

Answer/ Jawapan :



22. A school band consists of 5 players who are selected from 3 drummers, 5 guitarists and 4 singers. Find the number of different selections that can be made if the band consists of

Satu kumpulan muzik sekolah terdiri daripada 5 orang ahli yang akan dipilih daripada 3 orang pemain drum, 5 orang pemain gitar dan 4 orang penyanyi. Cari bilangan cara pilihan yang dapat jika kumpulan muzik itu terdiri daripada

- (a) 1 drummer, 3 guitarists and 1 singer,

1 orang pemain drum, 3 orang pemain gitar dan 1 orang penyanyi,

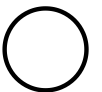
- (b) 1 drummer and at least 2 guitarists.

1 orang pemain drum dan sekurang-kurangnya 2 orang pemain gitar.

[4 marks]

[4 markah]

Answer/ Jawapan :



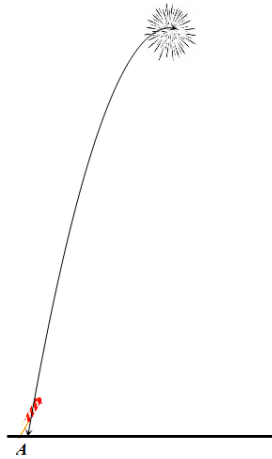


Diagram 7/ Rajah 7

Diagram 7 show the function $h(t) = -4t^2 + 32t$ as shown in the diagram on the side represents height, in meters, fireworks, t seconds after launch. Point A is a origin and the fireworks exploded at the highest point.

At what height does the fireworks explode?

Rajah 7 menunjukkan fungsi $h(t) = -4t^2 + 32t$ seperti ditunjukkan dalam rajah di sebelah mewakili tinggi, dalam meter, bunga api, t saat selepas dilancarkan. Titik A ialah asalan dan bunga api itu meletup pada titik tertinggi.

Pada ketinggian berapakah bunga api itu meletup?

[3 marks]

[3 markah]

Answer/ Jawapan :



24. The graph of quadratic function $f(x) = 2x^2 - 2(x-1) + k$ intersects the x -axis at two point. Find the range of values of k .

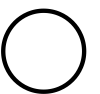
Graf fungsi kuadratik $f(x) = 2x^2 - 2(x-1) + k$ menyalang paksi- x pada dua titik.

Cari julat yang mungkin bagi k .

[3 marks]

[3 markah]

Answer/ Jawapan :



25. Diagram 8 shows the probability distribution of X . The discrete random variable X has a binomial probability distribution with $n = 4$, where n is the number of trials.

Rajah 8 menunjukkan taburan kebarangkalian bagi X . Pemboleh ubah rawak diskret X mempunyai satu taburan kebarangkalian binomial dengan $n = 4$, dengan keadaan n ialah bilangan percubaan.

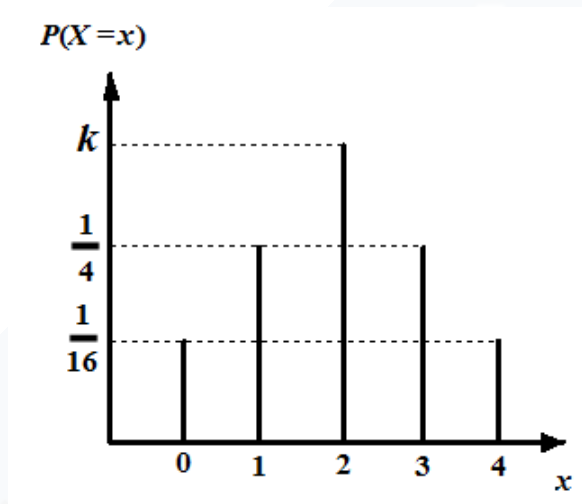


Diagram 8/ Rajah 8

Find

Cari

- (a) the value of k ,
nilai k ,
(b) $P(X \geq 3)$.

[4 marks]

[4 markah]

Answer / Jawapan :

