

NO. KAD PENGENALAN

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ANGKA GILIRAN

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JABATAN PELAJARAN NEGERI JOHOR

PEPERIKSAAN PERCUBAAN SPM 2010
ADDITIONAL MATHEMATICS

3472/1

Kertas 1
Sept.
2 Jam

Dua jam

ADDITIONAL MATHEMATICS

TINGKATAN 5

KERTAS 1

2 JAM

**JANGAN BUKA KERTAS SOALAN INI
SEHINGGA DIBERITAHU**

1. Tulis nombor kad pengenalan dan angka giliran anda pada petak 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 sebelah.

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

Kertas soalan ini mengandungi 18 halaman bercetak.

**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 4.
Satu senarai rumus disediakan di halaman 3 hingga 4.
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 inviligator at the end of the examination.
Serahkan kertas soalan ini kepada pengawas peperiksaan di akhir peperiksaan.

[Lihat sebelah

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

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

ALGEBRA

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

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

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

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

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

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

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

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

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

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

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

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

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

CALCULUS

KALKULUS

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

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

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

$$4 \quad \text{Area under a curve}$$

Luas di bawah lengkung

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

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

$$5 \quad \text{Volume generated}$$

Isipadu kisanan

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

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

GEOMETRY

GEOMETRI

$$1 \quad \text{Distance / Jarak}$$

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

$$2 \quad \text{Midpoint / Titik tengah}$$

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

$$3 \quad \text{A point dividing a segment of a line}$$

Titik yang membahagi suatu tembereng garis

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

$$4 \quad \text{Area of triangle / Luas segi tiga}$$

$$= \frac{1}{2} |(x_1y_2 + x_2y_3 + x_3y_1) - (x_2y_1 + x_3y_2 + x_1y_3)|$$

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

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

[Lihat sebelah

STATISTICS
STATISTIK

- | | | | |
|---|--|----|--|
| 1 | $\bar{x} = \frac{\sum x}{N}$ | 7 | $\bar{I} = \frac{\sum W_i I_i}{\sum W_i}$ |
| 2 | $\bar{x} = \frac{\sum fx}{\sum f}$ | 8 | ${}^n P_r = \frac{n!}{(n-r)!}$ |
| 3 | $\sigma = \sqrt{\frac{\sum (x - \bar{x})^2}{N}} = \sqrt{\frac{\sum x^2}{N} - \bar{x}^2}$ | 9 | ${}^n C_r = \frac{n!}{(n-r)!r!}$ |
| 4 | $\sigma = \sqrt{\frac{\sum f(x - \bar{x})^2}{\sum f}} = \sqrt{\frac{\sum fx^2}{\sum f} - \bar{x}^2}$ | 10 | $P(A \cup B) = P(A) + P(B) - P(A \cap B)$ |
| 5 | $m = L + \left[\frac{\frac{1}{2}N - F}{f_m} \right] C$ | 11 | $P(X=r) = {}^n C_r p^r q^{n-r}, \quad p + q = 1$ |
| 6 | $I = \frac{Q_1}{Q_0} \times 100$ | 12 | Mean / Min, $\mu = np$ |
| | | 13 | $\sigma = \sqrt{npq}$ |
| | | 14 | $Z = \frac{X - \mu}{\sigma}$ |

TRIGONOMETRY
TRIGONOMETRI

- | | | | |
|---|--|----|--|
| 1 | Arc length, $s = r\theta$
Panjang lengkok, $s = j\theta$ | 8 | $\tan 2A = \frac{2 \tan A}{1 - \tan^2 A}$ |
| 2 | Area of a sector, $A = \frac{1}{2}r^2\theta$
Luas sektor, $L = \frac{1}{2}j^2\theta$ | 9 | $\sin(A \pm B) = \sin A \cos B \pm \cos A \sin B$
$\sin(A \pm B) = \sin A \cos B \pm \cos A \sin B$ |
| 3 | $\sin^2 A + \cos^2 A = 1$
$\sin^2 A + \cos^2 A = 1$ | 10 | $\cos(A \pm B) = \cos A \cos B \mp \sin A \sin B$
$\cos(A \pm B) = \cos A \cos B \mp \sin A \sin B$ |
| 4 | $\sec^2 A = 1 + \tan^2 A$
$\sec^2 A = 1 + \tan^2 A$ | 11 | $\tan(A \pm B) = \frac{\tan A \pm \tan B}{1 \mp \tan A \tan B}$ |
| 5 | $\operatorname{cosec}^2 A = 1 + \cot^2 A$
$\operatorname{kosek}^2 A = 1 + \cot^2 A$ | 12 | $\frac{a}{\sin A} = \frac{b}{\sin B} = \frac{c}{\sin C}$ |
| 6 | $\sin 2A = 2 \sin A \cos A$
$\sin 2A = 2 \sin A \cos A$ | 13 | $a^2 = b^2 + c^2 - 2bc \cos A$
$a^2 = b^2 + c^2 - 2bc \cos A$ |
| 7 | $\cos 2A = \cos^2 A - \sin^2 A$
$= 2\cos^2 A - 1$
$= 1 - 2\sin^2 A$

$\operatorname{kos} 2A = \operatorname{kos}^2 A - \operatorname{sin}^2 A$
$= 2\operatorname{kos}^2 A - 1$
$= 1 - 2\operatorname{sin}^2 A$ | 14 | Area of a triangle / Luas segi tiga
$= \frac{1}{2} ab \sin C$ |

Answer all questions.
Jawab semua soalan.

- 1 The following information refers to the sets P and Q .
Maklumat berikut adalah berkaitan dengan set P dan set Q .

$$P = \{3, 5, 7\}$$

$$Q = \{5, 7, 8, 10, 13\}$$

Based on the information above, the relation between set P and Q is defined by the set of ordered pairs $\{(3, 5), (3, 8), (5, 7), (5, 13), (7, 13)\}$.
Berdasarkan maklumat di atas, hubungan antara set P dan set Q ditakrif dengan set pasangan tertib $\{(3, 5), (3, 8), (5, 7), (5, 13), (7, 13)\}$.

State
Nyatakan

- (a) the image of 5,
imej bagi 5,
- (b) the type of the relation.
jenis hubungan itu.

[2 marks]
[2 markah]

Answer /Jawapan: (a)
(b)

1

2

- 2 Given that $f^{-1} : x \rightarrow \frac{3-4x}{2}$,
Diberi fungsi $f^{-1} : x \rightarrow \frac{3-4x}{2}$,

Find
Cari

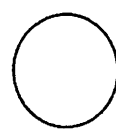
- (a) function $f(x)$,
fungsi $f(x)$,
- (b) the value of $f(5)$.
nilai $f(5)$.

[3 marks]
[3 markah]

Answer /Jawapan: (a)
(b)

2

3



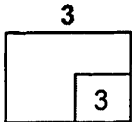
[Lihat sebelah
SULIT

- 3 Given the function $h : x \rightarrow 2x - 1$ and $k : x \rightarrow 6x + 1$.
Diberi fungsi $h : x \rightarrow 2x - 1$ dan $k : x \rightarrow 6x + 1$.

Find the value of x when $hk(x) = 4$.
Cari nilai x jika $hk(x) = 4$.

[3 marks]

[3 markah]

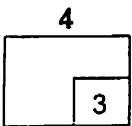
Answer /Jawapan: $x = \dots\dots\dots$

- 4 The straight line $y = p(1 - 2x)$ is a tangent to the curve $y - x^2 = 2$.
Garis lurus $y = p(1 - 2x)$ adalah tangen kepada lengkung $y - x^2 = 2$.

Find the possible values of p .
Cari nilai-nilai p yang mungkin.

[3 marks]

[3 markah]

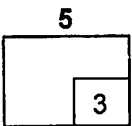
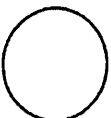
Answer /Jawapan: $p = \dots\dots\dots$

- 5 Solve the quadratic equation $2x^2 - 6x = x(x + 3) - 4$.
Selesaikan persamaan kuadratik $2x^2 - 6x = x(x + 3) - 4$.

Give your answer correct to four significant figures.
Berikan jawapan anda betul kepada empat angka bererti.

[3 marks]

[3 markah]

Answer /Jawapan: $\dots\dots\dots$ [Lihat sebelah
SULIT]

- 6 Diagram 6 shows the graph of the function $y = (x+3)^2 - p$ where p is a constant.
 Rajah 6 menunjukkan fungsi $y = (x+3)^2 - p$, dengan keadaan p ialah pemalar.

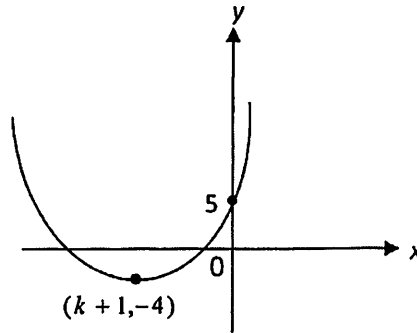


Diagram 6
Rajah 6

Given that $(k + 1, -4)$ is a minimum point of the curve $y = (x + 3)^2 - p$. Find
 Diberi $(k + 1, -4)$ ialah titik minimum kepada lengkung $y = (x + 3)^2 - p$. Cari

- (a) the value of p and of k ,
nilai p dan nilai k
- (b) the equation of the axis of symmetry.
persamaan paksi simetri.

[3 marks]
[3 markah]

Answer /Jawapan: (a) $p =$

$k =$

(b)

6	
	3

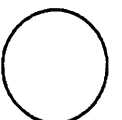
- 7 Solve the equation $2^{4-x} - 2^{3-x} = \frac{1}{8}$.

Selesaikan persamaan $2^{4-x} - 2^{3-x} = \frac{1}{8}$.

[3 marks]
[3 markah]

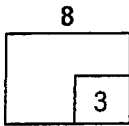
Answer /Jawapan: $x =$

7	
	3



- 8 Solve the equation $\log_3(3x + 2) - \log_3(x - 1) = 2$.
 Selesaikan persamaan $\log_3(3x + 2) - \log_3(x - 1) = 2$.

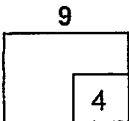
[3 marks]
[3 markah]



Answer /Jawapan: $x = \dots\dots\dots$

- 9 Given that $\log_2 m = p$ and $\log_3 m = r$. Express $\log_m 18$ in terms of p and r .
 Diberi $\log_2 m = p$ dan $\log_3 m = r$. Ungkapkan $\log_m 18$ dalam sebutan p dan r .

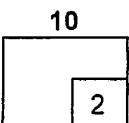
[4 marks]
[4 markah]



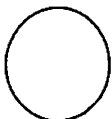
Answer /Jawapan: $\dots\dots\dots$

- 10 The first three terms of an arithmetic progression are $y, 2y - 2$ and $2y + 1$.
 Tiga sebutan pertama suatu jangjang aritmetik ialah $y, 2y - 2$ dan $2y + 1$.
 Find the value of y .
 Cari nilai y .

[2 marks]
[2 markah]



Answer /Jawapan: $y = \dots\dots\dots$



- 11 The sum of the first three terms of a geometric progression is 35 and the common ratio is 2. Find
Hasil tambah tiga sebutan pertama suatu jangjang geometri ialah 35 dan nisbah sepunya ialah 2. Cari

- (a) the first term of the progression,
sebutan pertama jangjang tersebut,
- (b) the eighth term.
sebutan ke lapan.

[3 marks]
 [3 markah]

Answer /Jawapan: (a)

(b)

11

3

- 12 The sum of the first n term, S_n , of a geometric progression is given by
Hasil tambah n sebutan pertama, S_n , bagi suatu jangjang geometri diberi oleh

$$S_n = 81 \left[1 - \left(\frac{2}{3} \right)^n \right]$$

Find
Cari

- (a) the common ratio of the geometric progression,
nisbah sepunya jangjang geometri
- (b) the sum to infinity of the progression
jumlah sehingga ketakterhinggaan

[4 marks]
 [4 markah]

Answer /Jawapan: (a)

(b)

12

4

[Lihat sebelah
 SULIT

- 13 The variables x and y are related by the equation $y = px^{-\frac{1}{2}}$, where p is a constant. Diagram 13 shows the straight line graph obtained by plotting $\log_{10}y$ against $\log_{10}x$.

Pembolehubah x dan y dihubungkan oleh persamaan $y = px^{-\frac{1}{2}}$, dengan keadaan p ialah pemalar. Rajah 13 menunjukkan graf garis lurus yang diperolehi dengan memplot $\log_{10}y$ melawan $\log_{10}x$.

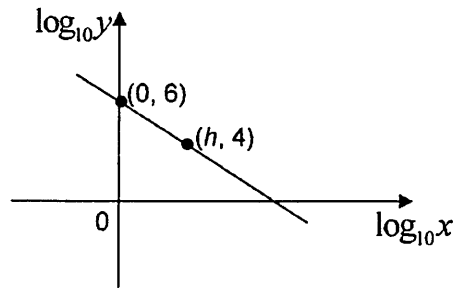


Diagram 13
Rajah 13

- (a) Reduce the equation $y = px^{-\frac{1}{2}}$ to linear form.

Tukarkan persamaan $y = px^{-\frac{1}{2}}$ kepada bentuk linear.

- (b) Find the value of
Cari nilai

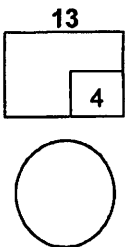
- (i) $\log_{10}p$,
(ii) h .

[4 marks]
[4 markah]

Answer/Jawapan: (a)

(b) (i) $\log_{10}p = \dots\dots\dots$

(ii) $h = \dots\dots\dots$



- 14 Diagram 14 shows the straight line PQR .
Rajah 14 menunjukkan garis lurus PQR .

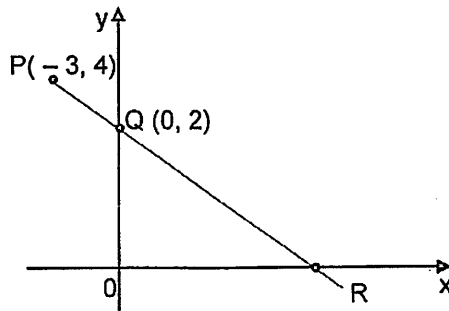


Diagram 14
Rajah 14

Find the equation of the straight line which is perpendicular to PQR and passes through point P .

Cari persamaan garis lurus yang berserenjang dengan PQR dan melalui titik P .

[3 marks]
 [3 markah]

Answer /Jawapan:

14
3

- 15 Diagram 15 shows vector OA drawn on a Cartesian plane.
Rajah 15 menunjukkan vektor OA dilukis pada suatu satah Cartesan.

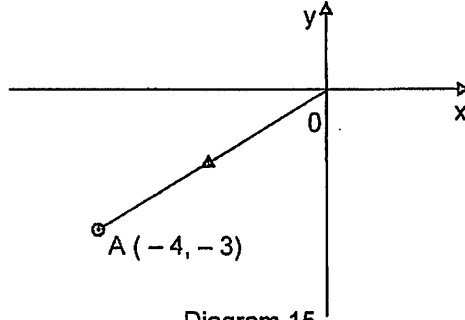


Diagram 15
Rajah 15

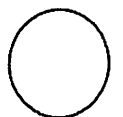
- (a) Express OA in the form $xi + yj$,
Ungkapkan OA dalam bentuk $xi + yj$.
- (b) Find the unit vector in the direction of OA .
Cari vektor unit dalam arah OA .

[2 marks]
 [2 markah]

Answer /Jawapan: (a)

(b)

15
2



16 The following information refers to the vectors \underline{a} , \underline{b} , \underline{p} , \underline{q} and \underline{r} .

Maklumat berikut adalah berkaitan dengan vektor-vektor \underline{a} , \underline{b} , \underline{p} , \underline{q} dan \underline{r} .

$$\begin{aligned} \underline{p} &= 3\underline{a} + 4\underline{b} \\ \underline{q} &= 2\underline{a} - \underline{b} \\ \underline{r} &= m\underline{a} + (m - n)\underline{b} \end{aligned}$$

where m and n are constants.
di mana m dan n adalah pemalar.

By using the information given, find the values of m and n when $\underline{r} = 4\underline{p} - 2\underline{q}$.

Dengan menggunakan maklumat yang diberi, cari nilai m dan nilai n jika $\underline{r} = 4\underline{p} - 2\underline{q}$.

[3 marks]
[3 markah]

16
3

Answer /Jawapan: $m =$
 $n =$

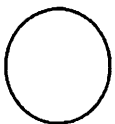
17 Solve the equation $1 - 2 \cos 2x = \cos x$ for $0^\circ \leq x \leq 360^\circ$.

Selesaikan persamaan $1 - 2 \cos 2x = \cos x$ for $0^\circ \leq x \leq 360^\circ$.

[4 marks]
[4 markah]

17
4

Answer /Jawapan: $x =$



- 18 Diagram 18 shows a circle $ABCD$ with centre O .
Rajah 18 menunjukkan sebuah bulatan $ABCD$ berpusat O .

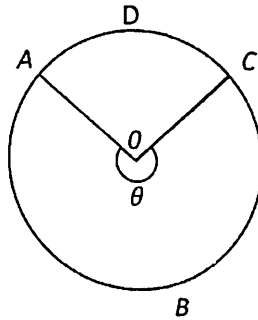


Diagram 18
Rajah 18

Given the length of the arc ABC is 30 cm and the angle of the sector ADC is 100° . Find

Diberi panjang lengkok ABC ialah 30 cm dan sudut sektor ADC ialah 100° . Cari

[Use/Guna $\pi = 3.142$]

- (a) the value of θ , in radian, correct to four significant figures,
nilai θ , dalam radian, betul kepada empat angka bererti,
- (b) the length, in cm, of the radius of the circle.
panjang, dalam cm, jejari bulatan itu.

[3 marks]
 [3 markah]

Answer/Jawapan: (a) $\theta = \dots\dots$ radian

(b) $\dots\dots\dots$ cm

18
3

- 19 Given that $f(x) = 2(x + 1)^3$, find
Diberikan bahawa $f(x) = 2(x + 1)^3$, cari

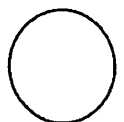
- (a) $f'(x)$,
- (b) the value of $f''(4)$.
nilai bagi $f''(4)$.

[4 marks]
 [4 markah]

Answer /Jawapan: (a) $\dots\dots\dots$

(b) $\dots\dots\dots$

19
4

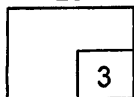


- 20 The radius of a circle increases at the rate of 0.4 cms^{-1} . Find the rate of change of the area of the circle when the radius is 10 cm.
Jejari suatu bulatan bertambah dengan kadar 0.4 cms^{-1} . Cari kadar perubahan luas bulatan apabila jejari ialah 10 cm.

[3 marks]

[3 markah]

20



Answer /Jawapan:

- 21 Given that $\int_1^2 h(x) dx = 3$.
Diberi bahawa $\int_1^2 h(x) dx = 3$.

Find
Cari

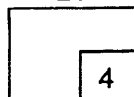
(a) $\int_2^1 h(x) dx$

- (b) the value of k if $\int_1^2 [h(x) + k] dx = 7$
nilai k jika $\int_1^2 [h(x) + k] dx = 7$

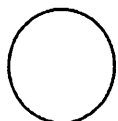
[4 marks]

[4 markah]

21



Answer/Jawapan: (a)

(b) $k =$ 

22 A committee of 6 people is to be chosen from 5 men and 7 women. Find the number of ways the committee can be formed if

Satu jawatankuasa terdiri dari 6 orang hendak dipilih dari 5 orang lelaki dan 7 orang perempuan. Cari bilangan cara yang berlainan jawatankuasa itu dapat dibentuk jika

- (a) there is no restriction, *tiada syarat dikenakan,*
- (b) the committee must has at most 2 men *jabatankuasa itu mengandungi selebih-lebihnya 2 orang lelaki*

[4 marks]
[4 markah]

Answer /Jawapan: (a)
(b)

22

4

23 The mean of a set of 8 numbers is 10. When two numbers k and k^2 are added to the set, the mean remains unchanged. Find the possible values of k .

Min bagi satu set yang mengandungi 8 nombor ialah 10. Apabila dua nombor k dan k^2 ditambah ke dalam set nombor-nombor itu, minnya tidak berubah. Cari nilai-nilai k yang mungkin.

[3 marks]
[3 markah]

Answer /Jawapan: $k =$

23

3



- 24 Table 24 shows the number of coloured cards in a box.
Jadual 24 menunjukkan bilangan kad berwarna dalam sebuah kotak.

Colour <i>Warna</i>	Number of cards <i>Bilangan kad</i>
Green <i>Hijau</i>	4
Black <i>Hitam</i>	5
Red <i>Merah</i>	6

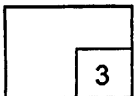
Table 24
Jadual 24

Two cards are drawn at random from the box. Find the probability that both cards are **not** the same colour.

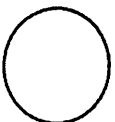
*Dua kad dikeluarkan secara rawak dari kotak itu. Cari kebarangkalian bahawa kedua-dua kad itu **tidak** sama warna.*

[3 marks]
 [3 markah]

24



Answer /Jawapan:



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

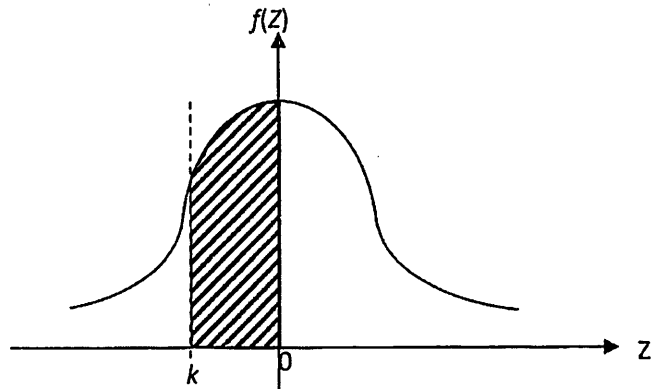


Diagram 25
Rajah 25

The probability represented by the area of the shaded region is 0.1554. Find
Kebarangkalian yang diwakili oleh luas kawasan berlorek ialah 0.1554. Cari

- (a) the value of k ,
nilai k ,
- (b) $P(Z > k)$

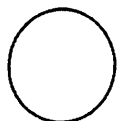
[4 marks]

[4 markah]

Answer /Jawapan: (a) $k =$

(b)

25
4



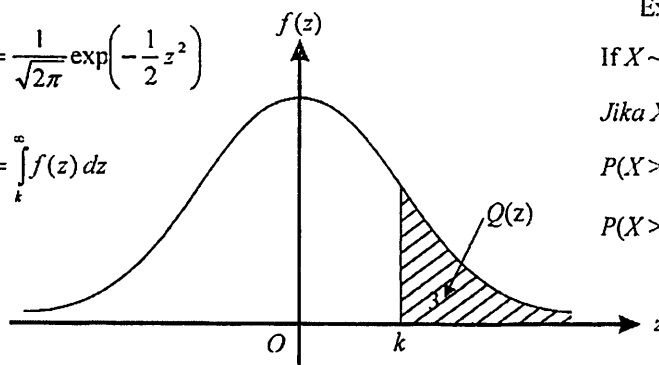
END OF QUESTION PAPER
KERTAS SOALAN TAMAT

**THE UPPER TAIL PROBABILITY $Q(z)$ FOR THE NORMAL DISTRIBUTION $N(0, 1)$
KEBARANGKALIAN Hujung Atas $Q(z)$ BAGI TABURAN NORMAL $N(0, 1)$**

z										Minus / Tolak									
	0	1	2	3	4	5	6	7	8	9	1	2	3	4	5	6	7	8	9
0.0	0.5000	0.4960	0.4920	0.4880	0.4840	0.4801	0.4761	0.4721	0.4681	0.4641	4	8	12	16	20	24	28	32	36
0.1	0.4602	0.4562	0.4522	0.4483	0.4443	0.4404	0.4364	0.4325	0.4286	0.4247	4	8	12	16	20	24	28	32	36
0.2	0.4207	0.4168	0.4129	0.4090	0.4052	0.4013	0.3974	0.3936	0.3897	0.3859	4	8	12	15	19	23	27	31	35
0.3	0.3821	0.3783	0.3745	0.3707	0.3669	0.3632	0.3594	0.3557	0.3520	0.3483	4	7	11	15	19	22	26	30	34
0.4	0.3446	0.3409	0.3372	0.3336	0.3300	0.3264	0.3228	0.3192	0.3156	0.3121	4	7	11	15	18	22	25	29	32
0.5	0.3085	0.3050	0.3015	0.2981	0.2946	0.2912	0.2877	0.2843	0.2810	0.2776	3	7	10	14	17	20	24	27	31
0.6	0.2743	0.2709	0.2676	0.2643	0.2611	0.2578	0.2546	0.2514	0.2483	0.2451	3	7	10	13	16	19	23	26	29
0.7	0.2420	0.2389	0.2358	0.2327	0.2296	0.2266	0.2236	0.2206	0.2177	0.2148	3	6	9	12	15	18	21	24	27
0.8	0.2119	0.2090	0.2061	0.2033	0.2005	0.1977	0.1949	0.1922	0.1894	0.1867	3	5	8	11	14	16	19	22	25
0.9	0.1841	0.1814	0.1788	0.1762	0.1736	0.1711	0.1685	0.1660	0.1635	0.1611	3	5	8	10	13	15	18	20	23
1.0	0.1587	0.1562	0.1539	0.1515	0.1492	0.1469	0.1446	0.1423	0.1401	0.1379	2	5	7	9	12	14	16	19	21
1.1	0.1357	0.1335	0.1314	0.1292	0.1271	0.1251	0.1230	0.1210	0.1190	0.1170	2	4	6	8	10	12	14	16	18
1.2	0.1151	0.1131	0.1112	0.1093	0.1075	0.1056	0.1038	0.1020	0.1003	0.0985	2	4	6	7	9	11	13	15	17
1.3	0.0968	0.0951	0.0934	0.0918	0.0901	0.0885	0.0869	0.0853	0.0838	0.0823	2	3	5	6	8	10	11	13	14
1.4	0.0808	0.0793	0.0778	0.0764	0.0749	0.0735	0.0721	0.0708	0.0694	0.0681	1	3	4	6	7	8	10	11	13
1.5	0.0668	0.0655	0.0643	0.0630	0.0618	0.0606	0.0594	0.0582	0.0571	0.0559	1	2	4	5	6	7	8	10	11
1.6	0.0548	0.0537	0.0526	0.0516	0.0505	0.0495	0.0485	0.0475	0.0465	0.0455	1	2	3	4	5	6	7	8	9
1.7	0.0446	0.0436	0.0427	0.0418	0.0409	0.0401	0.0392	0.0384	0.0375	0.0367	1	2	3	4	4	5	6	7	8
1.8	0.0359	0.0351	0.0344	0.0336	0.0329	0.0322	0.0314	0.0307	0.0301	0.0294	1	1	2	3	4	4	5	6	6
1.9	0.0287	0.0281	0.0274	0.0268	0.0262	0.0256	0.0250	0.0244	0.0239	0.0233	1	1	2	2	3	4	4	5	5
2.0	0.0228	0.0222	0.0217	0.0212	0.0207	0.0202	0.0197	0.0192	0.0188	0.0183	0	1	1	2	2	3	3	4	4
2.1	0.0179	0.0174	0.0170	0.0166	0.0162	0.0158	0.0154	0.0150	0.0146	0.0143	0	1	1	2	2	2	3	3	4
2.2	0.0139	0.0136	0.0132	0.0129	0.0125	0.0122	0.0119	0.0116	0.0113	0.0110	0	1	1	1	2	2	2	3	3
2.3	0.0107	0.0104	0.0102								0	1	1	1	1	2	2	2	2
			0.00990		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

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

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

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