

NAMA

KELAS

3472/1

Matematik

Tambahan

Kertas 1

Ogos-September

2 jam



MAJLIS PENGETUA SEKOLAH MENENGAH MALAYSIA

CAWANGAN NEGERI SEMBILAN DARUL KHUSUS

PROGRAM PENINGKATAN AKADEMIK TINGKATAN 5

SEKOLAH-SEKOLAH NEGERI SEMBILAN 2025

MATEMATIK TAMBAHAN

Kertas 1

Dua jam

JANGAN BUKA KERTAS SOALAN INI
SEHINGGA DIBERITAHU

- 1 Tulis nama dan kelas anda pada ruangan yang disediakan.
- 2 Kertas soalan ini adalah dalam dwibahasa.
- 3 Soalan dalam Bahasa Melayu mendahului soalan yang sepadan dalam Bahasa Inggeris.
- 4 Calon dibenarkan menjawab keseluruhan atau sebahagian soalan sama ada dalam Bahasa Inggeris atau Bahasa Melayu.
- 5 Calon dikehendaki membaca maklumat di halaman 28.

Untuk Kegunaan Pemeriksa			
Bahagian	Soalan	Markah Penuh	Markah Diperoleh
A	1	3	
	2	5	
	3	6	
	4	5	
	5	5	
	6	4	
	7	5	
	8	6	
	9	6	
	10	7	
	11	6	
	12	6	
B	13	8	
	14	8	
	15	8	
Jumlah		80	

Kertas soalan ini mengandungi 26 halaman bercetak dan 2 halaman kosong.

[Lihat halaman sebelah
SULIT

RUMUS **FORMULAE**

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

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

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

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

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

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

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

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

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

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

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

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

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

$$14 \quad y = uv, \quad \frac{dy}{dx} = u \frac{dv}{dx} + v \frac{du}{dx}$$

$$15 \quad y = \frac{u}{v}, \quad \frac{dy}{dx} = \frac{v \frac{du}{dx} - u \frac{dv}{dx}}{v^2}$$

$$16 \quad \frac{dy}{dx} = \frac{dy}{du} \times \frac{du}{dx}$$

$$17 \quad \text{Luas di bawah lengkung}$$

Area under a curve

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

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

$$18 \quad \text{Isi padu kisaran}$$

Volume of revolution

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

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

$$19 \quad I = \frac{Q_1}{Q_0} \times 100$$

$$20 \quad \bar{I} = \frac{\sum W_i I_i}{\sum W_i}$$

$$21 \quad {}^n P_r = \frac{n!}{(n-r)!}$$

$$22 \quad {}^n C_r = \frac{n!}{(n-r)!r!}$$

$$23 \quad P(X=r) = {}^n C_r p^r q^{n-r}, \quad p+q=1$$

$$24 \quad \text{Min / Mean, } \mu = np$$

$$25 \quad \sigma = \sqrt{npq}$$

$$26 \quad Z = \frac{X - \mu}{\sigma}$$

$$27 \quad \text{Panjang lengkok, } s = j\theta$$

Arc length, } s = r\theta

$$28 \quad \text{Luas sektor, } L = \frac{1}{2} j^2 \theta$$

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

$$29 \quad \sin^2 A + \cos^2 A = 1$$

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

$$30 \quad \sec^2 A = 1 + \tan^2 A$$

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

$$31 \quad \operatorname{cosec}^2 A = 1 + \cot^2 A$$

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

$$32 \quad \sin 2A = 2 \sin A \cos A$$

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

$$33 \quad \cos 2A = \cos^2 A - \sin^2 A$$

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

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

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

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

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

$$34 \quad \tan 2A = \frac{2 \tan A}{1 - \tan^2 A}$$

$$35 \quad \sin (A \pm B) = \sin A \cos B \pm \cos A \sin B$$

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

$$36 \quad \cos (A \pm B) = \cos A \cos B \mp \sin A \sin B$$

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

$$37 \quad \tan (A \pm B) = \frac{\tan A \pm \tan B}{1 \mp \tan A \tan B}$$

$$38 \quad \frac{a}{\sin A} = \frac{b}{\sin B} = \frac{c}{\sin C}$$

$$39 \quad a^2 = b^2 + c^2 - 2bc \cos A$$

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

$$40 \quad \text{Luas segi tiga / Area of triangle}$$

$$= \frac{1}{2} ab \sin C$$

$$41 \quad \text{Titik yang membahagi suatu tembereng garis}$$

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

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

$$42 \quad \text{Luas segi tiga / Area of triangle}$$

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

$$43 \quad |\mathbf{r}| = \sqrt{x^2 + y^2}$$

$$44 \quad \hat{\mathbf{r}} = \frac{x\mathbf{i} + y\mathbf{j}}{\sqrt{x^2 + y^2}}$$

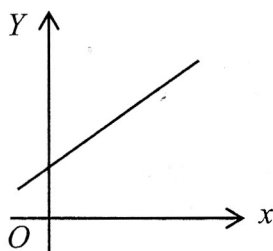
Bahagian A

[64 markah]

Jawab semua soalan.

- 1 Pemboleh ubah x dan y dihubungkan oleh persamaan $y - qx = px^2$ dengan keadaan p dan q ialah pemalar. Rajah 1 menunjukkan graf garis lurus yang diperoleh dengan memplot hubungan dari persamaan itu.

The variables x dan y are related by the equation $y - qx = px^2$ such that p and q are constants. Diagram 1 shows the straight line graph obtained by plotting the relation from the equation.



Rajah 1

Diagram 1

- (a) Diberi kecerunan yang diperoleh daripada graf garis lurus ialah p , ungkapkan Y dalam sebutan x dan / atau y .

Given the gradient obtained from the straight line graph is p , express Y in terms of x and / or y .

[1 markah]

[1 mark]

- (b) Satu titik $\left(2, \frac{1}{5}\right)$ berada di atas graf garis lurus tersebut, ungkapkan q dalam sebutan p .

A point $\left(2, \frac{1}{5}\right)$ lies on the straight line graph, express q in terms of p .

[2 markah]

[2 marks]

Jawapan/ Answer:

- 2 Diberi fungsi $f : x \rightarrow 2 - x$, fungsi $g : x \rightarrow qx^2 + r$ dan fungsi gubahannya $fg : x \rightarrow 3x^2 - 8$.

Given the function $f : x \rightarrow 2 - x$, the function $g : x \rightarrow qx^2 + r$ and the composite function $fg : x \rightarrow 3x^2 - 8$.

- (a) Cari nilai q dan nilai r .

Find the value of q and of r .

[3 markah]

[3 marks]

- (b) Seterusnya, cari nilai $g^2(0)$.

Hence, find the value of $g^2(0)$.

[2 markah]

[2 marks]

Jawapan/ Answer:

- 3 (a) Diberi $2^m \times 5^m = a^{2m} \times b^m$, ungkapkan a dalam sebutan b .
Given $2^m \times 5^m = a^{2m} \times b^m$, express a in terms of b .

[3 markah]

[3 marks]

- (b) Selesaikan / Solve

$$\log_{16} 2x + \log_2 x = -1$$

[3 markah]

[3 marks]

Jawapan/ Answer:

- 4 Diberi titik-titik $P(-3, 2)$, $Q(12, 7)$ dan R berada atas suatu garis lurus di mana $PR = \frac{3}{5}PQ$.

Given the points $P(-3, 2)$, $Q(12, 7)$ and R lies on a straight line such that $PR = \frac{3}{5}PQ$.

Dengan menggunakan operasi aritmetik vektor, cari

By using vector arithmetic operations, find

(a) $\overrightarrow{PQ}$,

[2 markah]

[2 marks]

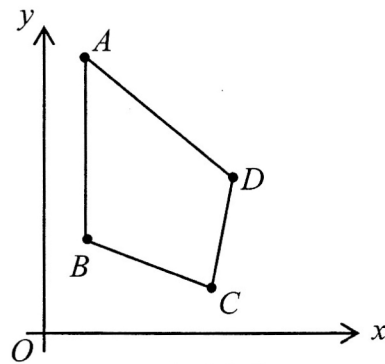
(b) $|\overrightarrow{OR}|$.

[3 markah]

[3 marks]

Jawapan/ Answer:

- 5 Rajah 2 menunjukkan sebuah lelayang $ABCD$.
 Diagram 2 shows a kite $ABCD$.



Rajah 2
 Diagram 2

Diberi titik-titik $B(2, 2)$, $C(5, 1)$ dan $D(6, 4)$. Garis AB selari dengan paksi-y dan garis AC ialah paksi simetri lelayang tersebut.

Given the points $B(2, 2)$, $C(5, 1)$ and $D(6, 4)$. The line AB is parallel to y -axis and the line AC is the axis of symmetry of the kite.

- (a) Cari persamaan garis lurus AC .

Find the equation of the straight line AC .

[3 markah]

[3marks]

- (b) Pepenjuru BD memotong garis AC pada titik P dengan keadaan $AP : PC = m : n$. Cari nisbah tersebut.

Diagonal BD intersects line AC at point P such that $AP : PC = m : n$. Find the ratio.

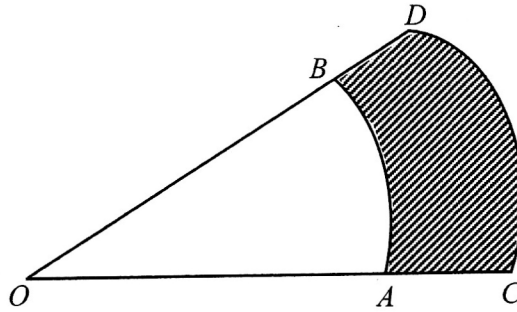
[2 markah]

[2 marks]

Jawapan/ Answer:

- 6 Rajah 3 menunjukkan dua buah sektor OAB dan OCD dengan panjang lengkok AB dan CD berpusat O .

Diagram 3 shows two sectors OAB and OCD with arcs AB and CD centered at O .



Rajah 3
Diagram 3

Diberi $\angle AOB = 0.52$ radian, $OA = 6$ cm dan panjang lengkok $CD = 5.98$ cm. Hitung
Given that $\angle AOB = 0.52$ radian, $OA = 6$ cm and arc length $CD = 5.98$ cm. Calculate

- (a) panjang, dalam cm, OD , [2 markah]
the length, in cm, OD , [2 marks]
- (b) luas, dalam cm^2 , kawasan berlorek. [2 markah]
the area, in cm^2 , of the shaded region. [2 marks]

Jawapan/ Answer:

- 7 (a) Diberi bahawa tiga sebutan pertama bagi satu jujukan ialah x , x^2 , x^3 . Nyatakan jenis jujukan tersebut. Beri satu sebab untuk jawapan anda.
- It is given that the first three terms of a sequence are x , x^2 , x^3 . State the type of the sequence. Give a reason for your answer.*

[1 markah]

[1 mark]

- (b) Bermula tahun 2020, jualan kereta elektrik di Malaysia meningkat secara konsisten sebanyak 8.5%. Sejumlah 32 550 unit kereta elektrik telah terjual pada tahun 2021. Syarikat T merupakan salah sebuah syarikat yang membekalkan kereta elektrik di pasaran Malaysia dan telah berjaya menguasai 30% daripada pasaran tersebut dari tahun 2023 hingga tahun 2025. Anggarkan bilangan kereta elektrik yang berjaya dijual oleh syarikat tersebut bagi tempoh tahun 2023 hingga tahun 2025.

Starting from 2020, electric car sales in Malaysia have consistently increased by 8.5%. A total of 32 550 units of electric cars were sold in 2021. Company T is one of the companies supplying electric cars in the Malaysian market and managed to dominate 30% of the market share from 2023 to 2025. Estimate the number of electric cars successfully sold by the company from 2023 to 2025.

[4 markah]

[4 marks]

Jawapan/ Answer:

- 8 (a) Selesaikan persamaan $\tan^2 x + 2 \tan x - 3 = 0$ bagi $0^\circ \leq x \leq 180^\circ$.

Solve the equation $\tan^2 x + 2 \tan x - 3 = 0$ for $0^\circ \leq x \leq 180^\circ$.

[3 markah]

[3 marks]

- (b) Diberi $\cos \frac{\theta}{2} = p$ dengan keadaan θ ialah sudut tirus, ungkapkan dalam sebutan p

Given $\cos \frac{\theta}{2} = p$ such that θ is an acute angle, express in terms of p .

(i) $\sin \frac{\theta}{2}$,

(ii) $\sin \theta$.

[3 markah]

[3 marks]

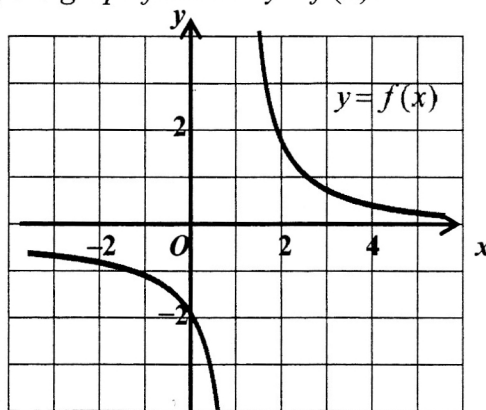
Jawapan/ Answer:

[Lihat halaman sebelah

SULIT

- 9 (a) Rajah 4 menunjukkan sebahagian daripada graf fungsi $y = f(x)$.

Diagram 4 shows part of the graph function $y = f(x)$.



Rajah 4
Diagram 4

Berdasarkan graf, nyatakan

Based on the graph, state

- (i) $\lim_{x \rightarrow 0^-} f(x)$,
 $\lim_{x \rightarrow 0^+} f(x)$,
 (ii) nilai bagi m , jika $\lim_{x \rightarrow m} f(x)$ tidak tertakrif.
 the value of m , if $\lim_{x \rightarrow m} f(x)$ undefined.

[2 markah]
[2 marks]

- (b) Diberi fungsi kecerunan bagi $y = g(x)$ ialah $3x^2 - px + 3$ dan titik $L(1, y)$ merupakan satu titik pusingan pada graf fungsi tersebut.

Given the gradient function of $y = g(x)$ is $3x^2 - px + 3$ and the point $L(1, y)$ is a turning point of the graph function.

- (i) Cari nilai p .
 Find the value of p .
 (ii) Tentukan sifat titik L . Tunjukkan pengiraan untuk menyokong jawapan anda.
 State the nature of point L . Shows the calculations to support your answer.

[4 markah]
[4 marks]

Jawapan/ *Answer*:

- 10 (a) Rajah 5 pada ruang jawapan menunjukkan graf bagi suatu taburan normal piawai di mana $X \sim N(\mu, \sigma^2)$.

Diagram 5 in the answer space shows a graph of standard normal distribution such that $X \sim N(\mu, \sigma^2)$.

- (i) Nyatakan nilai μ dan σ^2 .

State the value of μ and of σ^2 .

- (ii) Diberi $a < \mu < b$, lorekkan pada Rajah 5 bagi rantau-rantau yang mewakili $P(a \leq Z \leq \mu) + P(Z > b)$.

Given $a < \mu < b$, shade on the Diagram 5 for the region that represents $P(a \leq Z \leq \mu) + P(Z > b)$.

- (iii) Tentukan $P(-\infty < Z < \infty)$.

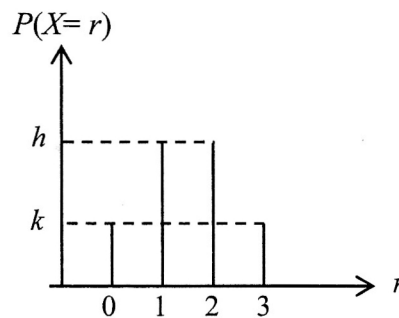
Determine $P(-\infty < Z < \infty)$.

[3 markah]

[3 marks]

- (b) Rajah 6 menunjukkan graf bagi suatu taburan binomial di mana $X \sim B(n, p)$.

Diagram 6 shows a graph of binomial distribution such that $X \sim B(n, p)$.



Rajah 6
Diagram 6

- (i) Nyatakan nilai n .
State the value of n .

- (ii) Cari nilai p .
Find the value of p .

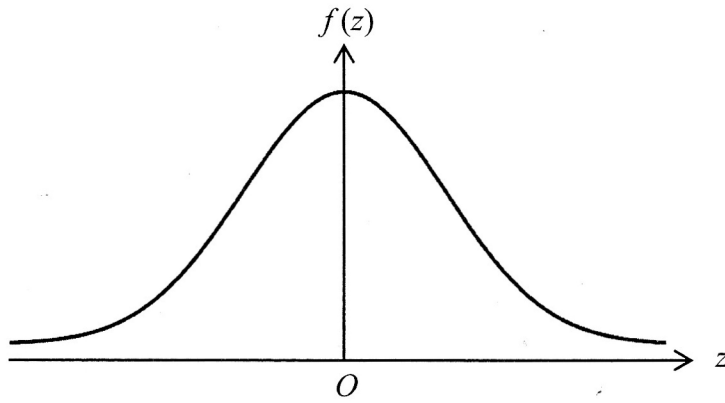
[4 markah]

[4 marks]

Jawapan / Answer :

(a) (i) $\mu =$ $\sigma^2 =$

(ii)



Rajah 5
Diagram 5

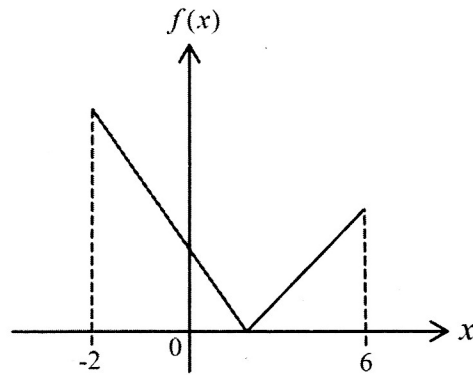
(iii)

(b) (i)

(ii)

- 11 Rajah 7 menunjukkan graf $f(x) = |2x - 5|$ bagi $-2 \leq x \leq 6$.

Diagram 7 shows a graph of $f(x) = |2x - 5|$ for $-2 \leq x \leq 6$.



Rajah 7

Diagram 7

- (a) Nyatakan julat yang sepadan bagi domain yang diberi.

State the corresponding range for the given domain.

[2 markah]

[2 marks]

- (b) Cari domain bagi $f(x) > 9$.

Find the domain of $f(x) > 9$.

[2 markah]

[2 marks]

- (c) Dengan menggunakan Rajah 8 di ruangan jawapan, tunjukkan sama ada fungsi f mempunyai fungsi songsang atau tidak. Justifikasi jawapan anda.

By using Diagram 8 in the answer space, show whether the function f has an inverse function or not. Justify your answer.

[2 markah]

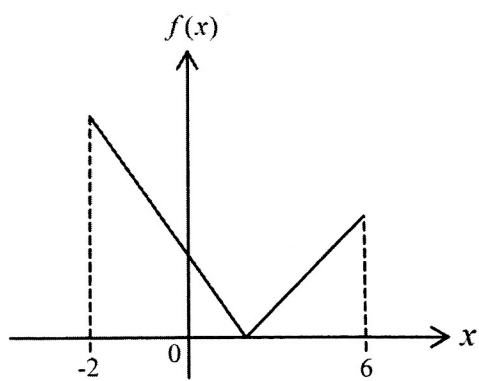
[2 mark]

Jawapan / Answer :

(a)

(b)

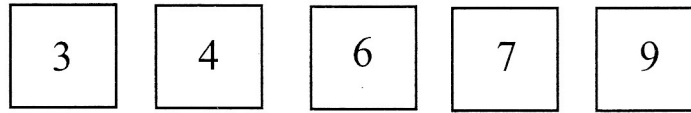
(c)



Rajah 8
Diagram 8

- 12 (a) Rajah 9 menunjukkan lima keping kad nombor.

Diagram 9 shows five numbered cards.



Rajah 9

Diagram 9

- (i) Cari bilangan nombor 4 digit yang lebih daripada 6000 yang dapat dibentuk daripada digit-digit yang diberikan tanpa ulangan.

Find the number of 4-digit numbers more than 6000 that can be formed from the given digits without repetition.

- (ii) Berapakah bilangan cara menyusun semua kad dalam satu bulatan?

How many ways are there to arrange all the cards in a circle?

[3 markah]

[3 marks]

- (b) 4 orang murid akan dipilih daripada 4 orang murid lelaki dan 5 orang murid perempuan untuk menyertai suatu kuiz. Cari bilangan cara yang berbeza memilih peserta jika sekurang-kurangnya 3 orang murid lelaki dipilih.

4 students are to be selected from 4 boys and 5 girls to participate in a quiz. Find the number of different ways to choose the participants if at least 3 boys are selected.

[3 markah]

[3 marks]

Jawapan/ Answer:

Join SPM Study Group

<https://spmpaper.me/group>



Ruang jawapan tambahan
Extra answer space

Bahagian B

[16 markah]

Jawab mana-mana **dua** soalan daripada bahagian ini.

13 (a) Diberi

Given

$$\sqrt{m} x + \sqrt{7} = \sqrt{3}$$

Ungkapkan x dalam sebutan m .*Express x in terms of m .*

[2 markah]

[2 marks]

(b) Diberi $m = a^x$, tunjukkan bahawa*Given that $m = a^x$, show that*

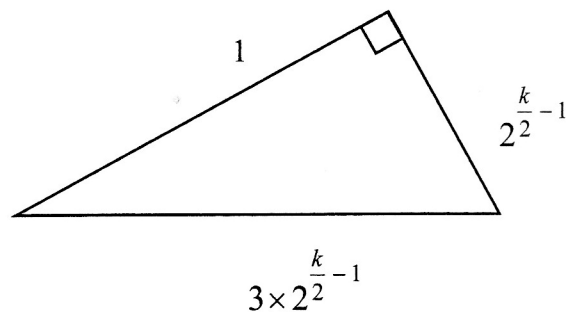
$$\log_a m^n = n \log_a m$$

dengan keadaan n ialah sebarang nombor nyata.*such that n is any real number.*

[2 markah]

[2 marks]

(c) Rajah 10 menunjukkan segi tiga bersudut tegak.

Diagram 10 shows a right angled triangle.

Rajah 10

Diagram 10

Cari nilai k .*Find the value of k .*

[4 markah]

[4 marks]

Jawapan/ *Answer*:

- 14 (a) Diberi satu fungsi kuadratik $y = ax^2 - bx + c$ tidak menyentuh paksi- x dan $c < 0$.
 Given a quadratic function $y = ax^2 - bx + c$ does not touch the x -axis and $c < 0$.
 Nyatakan julat bagi

State the range of

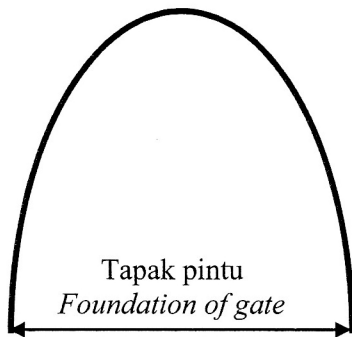
- (i) a ,
 (ii) fungsi pembeza. *the function discriminant.*

[2 markah]

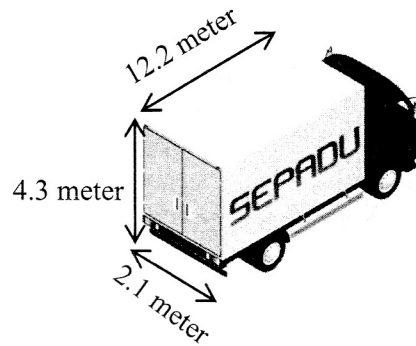
[2 marks]

- (b) Rajah 11 menunjukkan bentuk pintu gerbang yang berbentuk parabola. Pintu gerbang tersebut perlu cukup lebar untuk dua buah kenderaan masuk melaluinya. Rajah 12 menunjukkan kenderaan terbesar yang akan menggunakan laluan tersebut.

Diagram 11 shows a parabolic gate. The gate needs to be wide enough for two vehicles to pass through. Diagram 12 shows the largest vehicle that will use the route.



Rajah 11
Diagram 11



Rajah 12
Diagram 12

Syarikat Syabas telah mencadangkan untuk membina pintu gerbang setinggi 6 meter dan lebar tapak 10 meter.

Syabas Company has reserved to build the gate as high as 6 meters and the width of the base is 10 meters.

- (i) Wakilkan reka bentuk pintu gerbang yang dicadangkan oleh Syarikat Syabas dalam bentuk $f(x) = a(x + p)^2 + q$.

Represent the gate shape design reserved by Syabas Company in the form of

$$f(x) = a(x + p)^2 + q.$$

[3 markah]

[3 marks]

- (ii) Adakah reka bentuk pintu gerbang tersebut dapat dilalui dua buah kenderaan seperti dalam Rajah 12 dengan serentak? Justifikasi jawapan anda.

Can the gate design allow two vehicles shown in Diagram 12 to pass through simultaneously? Justify your answer.

[3 markah]

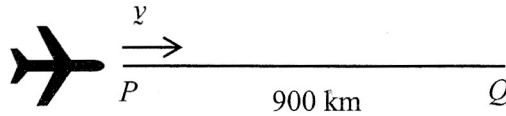
[3 marks]

Jawapan/ *Answer*:

[Lihat halaman sebelah
SULIT

- 15 Sebuah kapal terbang bergerak dari titik P ke titik Q , di mana Q terletak 900 km ke arah timur dari P . Halaju kapal terbang dalam udara pegun ialah $\underline{v} = 700\hat{i} - 100\hat{j} \text{ kmj}^{-1}$. Terdapat angin yang bertiup dengan halaju tetap $\underline{u} = a\hat{i} + b\hat{j} \text{ kmj}^{-1}$.

An airplane flies from point P to point Q , where Q is 900 km due east of P . The velocity of the airplane in still air is $\underline{v} = 700\hat{i} - 100\hat{j} \text{ kmh}^{-1}$. There is a wind blowing with a constant velocity of $\underline{u} = a\hat{i} + b\hat{j} \text{ kmh}^{-1}$.



Rajah 13
Diagram 13

- (a) Diberi bahawa kapal terbang terbang terus dari P ke Q , cari nilai b .
Given that the airplane flies directly from P to Q , find the value of b . [3 markah]
[3 marks]
- (b) Jika perjalanan tersebut mengambil masa 1.25 jam, buktikan bahawa $a = 20$.
If the journey takes 1.25 hours, show that $a = 20$. [2 markah]
[2 marks]
- (c) Kapal terbang itu pulang dari Q ke P , dengan halajunya dalam udara pegun ialah $\underline{v} = -700\hat{i} - 100\hat{j} \text{ kmj}^{-1}$. Kira masa yang diambil untuk pulang dengan andaian halaju angin tidak berubah.
The airplane returns from Q to P , with its velocity in still air is $\underline{v} = -700\hat{i} - 100\hat{j} \text{ kmh}^{-1}$. Calculate the time taken for the return journey, assuming the wind velocity remains unchanged. [2 markah]
[2 marks]
- (d) Berapakah laju sebenar kapal terbang apabila tiada angin?
What is the actual speed of the airplane when there is no wind? [1 markah]
[1 mark]

Jawapan/ *Answer*:

Ruang jawapan tambahan
Extra answer space

KERTAS PEPERIKSAAN 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	0	1	2	3	4	5	6	7	8	9	Minus / Tolak								
0.0	.5000	.4960	.4920	.4880	.4840	.4801	.4761	.4721	.4681	.4641	4	8	12	16	20	24	28	32	36
0.1	.4602	.4562	.4522	.4483	.4443	.4404	.4364	.4325	.4286	.4247	4	8	12	16	20	24	28	32	36
0.2	.4207	.4168	.4219	.4090	.4052	.4013	.3974	.3936	.3897	.3859	4	8	12	15	19	23	27	31	35
0.3	.3821	.3783	.3745	.3707	.3669	.3632	.3594	.3557	.3520	.3483	4	7	11	15	19	22	26	30	34
0.4	.3446	.3409	.3372	.3336	.3300	.3264	.3228	.3192	.3156	.3121	4	7	11	15	18	22	25	29	32
0.5	.3085	.3050	.3015	.2981	.2946	.2912	.2877	.2843	.2810	.2776	3	7	10	14	17	20	24	27	31
0.6	.2743	.2709	.2676	.2643	.2611	.2578	.2546	.2514	.2483	.2451	3	7	10	13	16	19	23	26	29
0.7	.2420	.2389	.2358	.2327	.2296	.2266	.2236	.2206	.2177	.2148	3	6	9	12	15	18	21	24	27
0.8	.2119	.2090	.2061	.2033	.2005	.1977	.1949	.1922	.1894	.1867	3	5	8	11	14	16	19	22	25
0.9	.1841	.1814	.1788	.1762	.1736	.1711	.1685	.1660	.1635	.1611	3	5	8	10	13	15	18	20	23
1.0	.1587	.1562	.1539	.1515	.1492	.1469	.1446	.1423	.1401	.1379	2	5	7	9	12	14	16	19	21
1.1	.1357	.1335	.1314	.1292	.1271	.1251	.1230	.1210	.1190	.1170	2	4	6	8	10	12	14	16	18
1.2	.1151	.1131	.1112	.1093	.1075	.1056	.1038	.1020	.1003	.0985	2	4	6	7	9	11	13	15	17
1.3	.0968	.0951	.0934	.0918	.0901	.0885	.0869	.0853	.0838	.0823	2	3	5	6	8	10	11	13	14
1.4	.0808	.0793	.0778	.0764	.0749	.0735	.0721	.0708	.0694	.0681	1	3	4	6	7	8	10	11	13
1.5	.0668	.0655	.0643	.0630	.0618	.0606	.0594	.0582	.0571	.0559	1	2	4	5	6	7	8	10	11
1.6	.0548	.0537	.0526	.0516	.0505	.0495	.0485	.0475	.0465	.0455	1	2	3	4	5	6	7	8	9
1.7	.0446	.0436	.0427	.0418	.0409	.0401	.0392	.0384	.0375	.0367	1	2	3	4	4	5	6	7	8
1.8	.0359	.0351	.0344	.0336	.0329	.0322	.0314	.0307	.0301	.0294	1	1	2	3	4	4	5	6	6
1.9	.0287	.0281	.0274	.0268	.0262	.0256	.0250	.0244	.0239	.0233	1	1	2	2	3	4	4	5	5
2.0	.0228	.0222	.0217	.0212	.0207	.0202	.0197	.0192	.0188	.0183	0	1	1	2	2	3	3	4	4
2.1	.0179	.0174	.0170	.0166	.0162	.0158	.0154	.0150	.0146	.0143	0	1	1	2	2	2	3	3	4
2.2	.0139	.0136	.0132	.0129	.0125	.0122	.0119	.0116	.0113	.0110	0	1	1	1	2	2	2	3	3
2.3	.0107	.0104	.0102								0	1	1	1	1	2	2	2	2
				.02990	.02964	.02939	.02914				3	5	8	10	13	15	18	20	23
								.02889	.02866	.02842	2	5	7	9	12	14	16	16	21
2.4	.02820	.02798	.02776	.02755	.02734						2	4	6	8	11	13	15	17	19
						.02714	.02695	.02676	.02657	.02639	2	4	6	7	9	11	13	15	17
2.5	.02621	.02604	.02587	.02570	.02554	.02539	.02523	.02508	.02494	.02480	2	3	5	6	8	9	11	12	14
2.6	.02466	.02453	.02440	.02427	.02415	.02402	.02391	.02379	.02368	.02357	1	2	3	5	6	7	9	9	10
2.7	.02347	.02336	.02326	.02317	.02307	.02298	.02289	.02280	.02272	.02264	1	2	3	4	5	6	7	8	9
2.8	.02256	.02248	.02240	.02233	.02226	.02219	.02212	.02205	.02199	.02193	1	1	2	3	4	4	5	6	6
2.9	.02187	.02181	.02175	.02169	.02164	.02159	.02154	.02149	.02144	.02139	0	1	1	2	2	3	3	4	4
3.0	.02135	.02131	.02126	.02122	.02118	.02114	.02111	.02107	.02104	.02100	0	1	1	2	2	2	3	3	4

[Lihat halaman sebelah
SULIT

MAKLUMAT UNTUK CALON
INFORMATION FOR CANDIDATES

1. Kertas soalan ini mengandungi dua bahagian: **Bahagian A** dan **Bahagian B**.
*This question paper consists of two sections: **Section A** and **Section B**.*
2. Jawab **semua** soalan dalam **Bahagian A** dan mana-mana **dua** soalan daripada **Bahagian B**.
*Answer **all** questions in **Section A** and any **two** questions from **Section B**.*
3. Tulis jawapan anda pada ruang yang disediakan dalam kertas soalan.
Write your answers in the spaces provided in this question paper.
4. Tunjukkan langkah-langkah penting dalam kerja mengira anda. Ini boleh membantu anda untuk mendapatkan markah.
Show your working. It may help you to get marks.
5. Sekiranya anda hendak menukar jawapan, batalkan jawapan yang telah dibuat. Kemudian tulis jawapan yang baru.
If you wish to change your answer, cross out the answer that you have done. Then write down the new answer.
6. Rajah yang mengiringi soalan tidak dilukis mengikut skala kecuali dinyatakan.
The diagrams in the questions provided are not drawn to scale unless stated.
7. Markah yang diperuntukkan bagi setiap soalan ditunjukkan dalam kurungan.
The marks allocated for each question are shown in brackets.
8. Satu senarai rumus disediakan di halaman **2** dan **3**.
*A list of formulae is provided on page **2** and **3**.*
9. Jadual Kebarangkalian Hujung Atas $Q(z)$ Bagi Taburan Normal $N(0, 1)$ disediakan di halaman **27**.
*The Upper Tail Probability $Q(z)$ For the Normal Distribution $N(0, 1)$ Table is provided on page **27**.*
10. Anda dibenarkan menggunakan kalkulator saintifik.
You may use a scientific calculator.
11. Serahkan kertas soalan ini kepada pengawas peperiksaan pada akhir peperiksaan.
Hand in this question paper to the invigilator at the end of the examination.