

**RUMUS
FORMULAE**

- 1 $x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$
- 2 $a^m \times a^n = a^{m+n}$
- 3 $a^m \div a^n = a^{m-n}$
- 4 $(a^m)^n = a^{mn}$
- 5 $\log_a mn = \log_a m + \log_a n$
- 6 $\log_a \frac{m}{n} = \log_a m - \log_a n$
- 7 $\log_a m^n = n \log_a m$
- 8 $\log_a b = \frac{\log_c b}{\log_c a}$
- 9 $T_n = a + (n-1)d$
- 10 $S_n = \frac{n}{2}[2a + (n-1)d]$
- 11 $T_n = ar^{n-1}$
- 12 $S_n = \frac{a(r^n - 1)}{r - 1} = \frac{a(1 - r^n)}{1 - r}, r \neq 1$
- 13 $S_\infty = \frac{a}{1-r}, |r| < 1$
- 14 $y = uv, \frac{dy}{dx} = u \frac{dv}{dx} + v \frac{du}{dx}$
- 15 $y = \frac{u}{v}, \frac{dy}{dx} = \frac{v \frac{du}{dx} - u \frac{dv}{dx}}{v^2}$
- 16 $\frac{dy}{dx} = \frac{dy}{du} \times \frac{du}{dx}$
- 17 Luas di bawah lengkung
Area under curve
 $= \int_a^b y \, dx$ atau (or)
 $= \int_a^b x \, dy$
- 18 Isi padu kisaran
Volume of revolution
 $= \int_a^b \pi y^2 \, dx$ atau (or)
 $= \int_a^b \pi x^2 \, dy$
- 19 $I = \frac{Q_1}{Q_0} \times 100$
- 20 $\bar{I} = \frac{\sum W_i I_i}{\sum W_i}$
- 21 ${}^n P_r = \frac{n!}{(n-r)!}$
- 22 ${}^n C_r = \frac{n!}{(n-r)!r!}$
- 23 $P(X = r) = {}^n C_r p^r q^{n-r}, p + q = 1$
- 24 Min / Mean, $\mu = np$
- 25 $\sigma = \sqrt{npq}$
- 26 $Z = \frac{X - \mu}{\sigma}$
- 27 Panjang lengkok, $s = j\theta$
Arc length, $s = r\theta$
- 28 Luas sector, $A = \frac{1}{2}j^2\theta$
Area of sector, $A = \frac{1}{2}r^2\theta$
- 29 $\sin^2 A + \cos^2 A = 1$
 $\sin^2 A + \cos^2 A = 1$
- 30 $\sec^2 A = 1 + \tan^2 A$
 $\sec^2 A = 1 + \tan^2 A$
- 31 $\operatorname{cosec}^2 A = 1 + \cot^2 A$
 $\operatorname{cosec}^2 A = 1 + \cot^2 A$
- 32 $\sin 2A = 2 \sin A \cos A$
 $\sin 2A = 2 \sin A \cos A$
- 33 $\cos 2A = \cos^2 A - \sin^2 A$
 $= 2\cos^2 A - 1$
 $= 1 - 2\sin^2 A$
 $\cos 2A = \cos^2 A - \sin^2 A$
 $= 2\cos^2 A - 1$
 $= 1 - 2\sin^2 A$

- 34 $\tan 2A = \frac{2 \tan A}{1 - \tan^2 A}$
- 35 $\sin(A \pm B) = \sin A \cos B \pm \cos A \sin B$
 $\sin(A \pm B) = \sin A \cos B \pm \cos A \sin B$
- 36 $\cos(A \pm B) = \cos A \cos B \mp \sin A \sin B$
 $\cos(A \pm B) = \cos A \cos B \mp \sin A \sin B$
- 37 $\tan(A \pm B) = \frac{\tan A \pm \tan B}{1 \mp \tan A \tan B}$
- 38 $\frac{a}{\sin A} = \frac{b}{\sin B} = \frac{c}{\sin C}$
- 39 $a^2 = b^2 + c^2 - 2bc \cos A$
 $a^2 = b^2 + c^2 - 2bc \cos A$
- 40 Luas segi tiga / *Area of Triangle*
 $= \frac{1}{2} ab \sin C$
- 41 Titik yang membahagi suatu tembereng garis
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 Luas segi tiga / *Area of Triangle*
 $= \frac{1}{2} | (x_1y_2 + x_2y_3 + x_3y_1) - (x_2y_1 + x_3y_2 + x_1y_3) |$
- 43 $|r| = \sqrt{x^2 + y^2}$
- 44 $\hat{r} = \frac{x\hat{i} + y\hat{j}}{\sqrt{x^2 + y^2}}$

Bahagian A / Section A

[64 markah / marks]

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

1. (a) Permudahkan $k^{\frac{1}{2}} \times 3k^{-\frac{1}{3}}$

Simplify $k^{\frac{1}{2}} \times 3k^{-\frac{1}{3}}$

[2 markah]

[2 marks]

(b) Tunjukkan bahawa $5^{x+1} - 5^{x-1} + 5^x$ boleh dibahagi tepat dengan 29 bagi semua integer positif x .

Show that $5^{x+1} - 5^{x-1} + 5^x$ *is divisible by 29 for all positive integers* x .

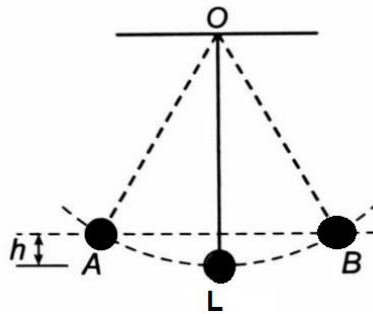
[2 markah]

[2 marks]

Jawapan / Answer:

2. Rajah 1 menunjukkan sebuah pendulum dengan panjang 20 cm yang tergantung pada O dan berada pada kedudukan awal L. Apabila pendulum tersebut ditarik ke kedudukan A yang mempunyai perbezaan ketinggian menegak, h dengan 4 cm daripada kedudukan asalnya dan kemudian dilepaskan, pendulum itu berayun.

The Diagram 1 shows a 20 cm length pendulum hanging at point O which has an initial position at point L. When the pendulum is pulled to position A which has a vertical height difference, h of 4 cm from its initial position and then released, the pendulum oscillates.



Rajah 1
Diagram 1

Cari jarak yang dilalui oleh pendulum dari titik A ke titik B

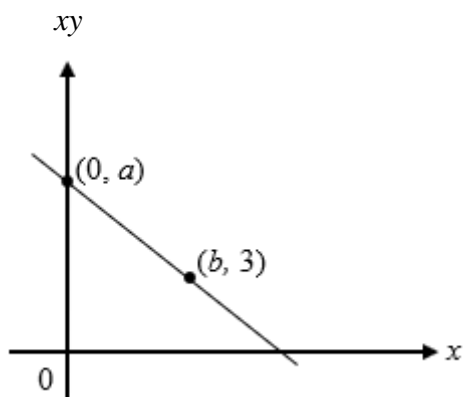
Find the distance travelled by the pendulum from point A to point B.

[Guna / use $\pi = 3.142$]

[4 markah / marks]

Jawapan / Answer:

3. Rajah 2 menunjukkan graf garis lurus xy melawan x .
Diagram 2 shows a straight-line graph of xy against x .



Rajah 2
Diagram 2

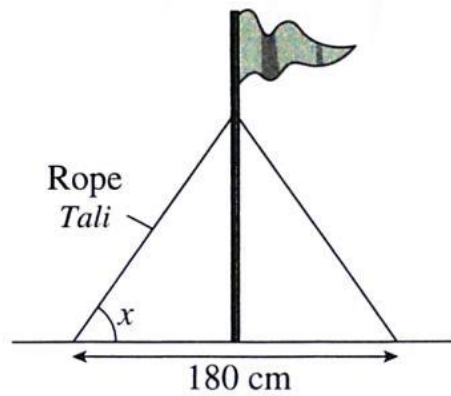
Diberi $y = \frac{7}{x} - 1$, hitung nilai a dan b .

Given that $y = \frac{7}{x} - 1$, calculate the value of a and of b .

[4 markah]
[4 marks]

Jawapan / *Answer:*

4.



Rajah3
Diagram 3

Rajah 3 menunjukkan sebatang tiang yang didirikan di atas tanah dengan menggunakan dua utas tali yang sama panjang.

Diberi bahawa $\sin \frac{x}{2} = 2t$, ungkapkan

Diagram 3 shows a pole is reinforced by two same length ropes to the land.

Given that $\sin \frac{x}{2} = 2t$, express

(a) panjang, L , setiap tali itu dalam sebutan t
length, L , of each rope in terms of t .

[3 markah /3 marks]

(b) $\tan \frac{x}{2}$ dalam sebutan t
 $\tan \frac{x}{2}$ *in terms of t .*

[2 markah /2 marks]

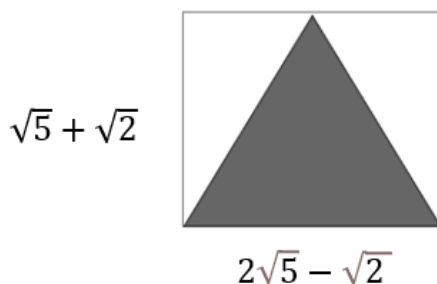
Jawapan / Answer:

5. (a) Tukarkan perpuluhan berulang 0.545454 ... kepada pecahan tanpa menggunakan kaedah janjang.

Convert the recurring decimal 0.545454... to fraction without using progression method.

[2 markah]

[2 marks]



Rajah 4
Diagram 4

- b) Panjang dan lebar segi empat tepat pada Rajah 4 ialah $2\sqrt{5} - \sqrt{2}$ dan $\sqrt{5} + \sqrt{2}$ masing-masing. Tentukan luas kawasan berwarna seperti ditunjukkan dalam Rajah 4 dan nyatakan jawapan anda dalam bentuk $a + b\sqrt{10}$, dengan a dan b ialah nombor nisbah.

The length and the width of a rectangle at Diagram 4 are $2\sqrt{5} - \sqrt{2}$ and $\sqrt{5} + \sqrt{2}$ respectively. Determine the area of coloured region as shown in the Diagram 4 and state your answer in the form of $a + b\sqrt{10}$, where a and b are rational numbers.

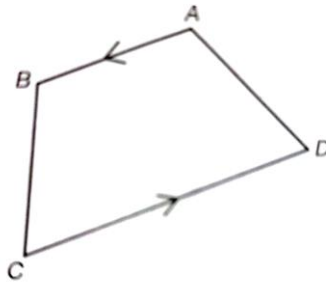
[3 markah]

[3 marks]

Jawapan / Answer:

6. Rajah 5 menunjukkan sebuah trapezium ABCD.

Diagram 5 shows a trapezium ABCD.



Rajah 5 / Diagram 5

Diberi bahawa $\overrightarrow{AB} = (h + 2)\underline{i} - 3\underline{j}$, $\overrightarrow{CD} = 2\underline{i} + 3k\underline{j}$ dan $2\overrightarrow{AB} = \overrightarrow{DC}$. Cari

Given that $\overrightarrow{AB} = (h + 2)\underline{i} - 3\underline{j}$, $\overrightarrow{CD} = 2\underline{i} + 3k\underline{j}$ and $2\overrightarrow{AB} = \overrightarrow{DC}$. Find

- (a) nilai h dan nilai k .
the values of h and of k ,

[3 markah /3 marks]

- (b) vektor unit dalam arah \overrightarrow{AB} .
the unit vector in the direction \overrightarrow{AB} .

[2 markah /2 marks]

Jawapan / Answer:

7. Diberi $f(x) = \frac{4}{(1-2x)^3}$ dan $f'(x) = m(1-2x)^n$

Given $f(x) = \frac{4}{(1-2x)^3}$ and $f'(x) = m(1-2x)^n$

(a) Cari nilai bagi $m + n$

Find the value of $m + n$

[2 markah /2 marks]

(b) Seterusnya, cari nilai p diberi $\frac{1}{p} \int f'(x)dx = -\frac{1}{81}$ dan $x = 2$

Hence, find the value of p given $\frac{1}{p} \int f'(x)dx = -\frac{1}{81}$ and $x = 2$

[3 markah /3 marks]

Jawapan / Answer:

8.

(a) (i) Diberi C ialah satu titik pada tembereng garis yang menyambungkan titik

A (-12,1) dan titik B (3,7) dengan keadaan $AC = \frac{1}{3}AB$. Cari koordinat titik C.

Given C is a point on a line segment joining the points A (-12, 1) and B (3, 7) such that $AC = \frac{1}{3}AB$. Find the coordinate of point C

[2 markah/ 2 marks]

(ii) Seterusnya, cari persamaan garis lurus AC.

Hence, find the equation of straight line AC.

[2 markah/ 2 marks]

(b) Titik P bergerak dengan keadaan jaraknya sentiasa 6 unit dari B. Cari persamaan lokus bagi titik P.

Point P moves such that its distance from B is always 6 units. Find the equation of locus of point P

[3 markah/ 3 marks]

Jawapan / Answer:

9.

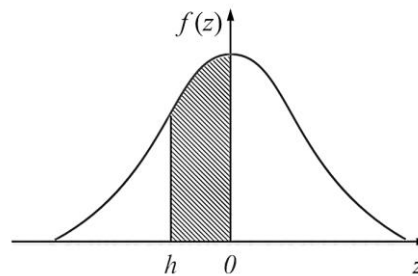
- (a) X ialah pemboleh ubah rawak diskret dengan keadaan $X \sim B(25, p)$ dengan keadaan $p < \frac{1}{2}$ dan $\sigma^2 = \frac{50}{9}$, cari min bagi X .

X is a discrete random variable such that $X \sim B(25, p)$ with $p < \frac{1}{2}$ and $\sigma^2 = \frac{50}{9}$, find the mean of X

[3 markah/3marks]

- (b) Rajah 6 menunjukkan graf taburan normal. Kebarangkalian yang ditunjukkan dengan kawasan berlorek 0.2881.

Diagram 6 shows a standard normal distribution graph. The probability represented by the area of the shaded region is 0.2881.



Rajah 6 /Diagram 6

- (i) Cari $P(z \geq h)$

Find $P(z \geq h)$

- (ii) X ialah pemboleh ubah rawak selanjar bertaburan normal, dengan min 84 dan sisihan piawai 5, cari nilai X apabila skor- z ialah h .

X is a continuous random variable which normally distributed with mean 84 and standard deviation 5, find the value of X when the z -score is h .

[3 markah/3marks]

Jawapan / *Answer*:

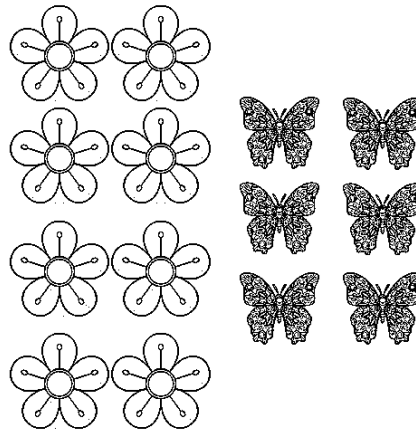
- 10 (a) Palindrom berangka ialah integer yang mempunyai digit simetri, misalnya 55, 1001, 24142 dan lain-lain. Cari bilangan palindrom lima digit.

A numerical palindrome is an integer that has symmetric digits, example 55, 1001, 24142 and others. Find the number of five-digit palindromes.

[4 markah / 4 marks]

- (b) Rajah 7 menunjukkan dua jenis manik yang akan digunakan oleh Husna untuk membuat gelang.

Diagram 7 shows two types of beads that Husna will use to make a bracelet.



Rajah 7 / Diagram 7

Berapakah cara Husna boleh memilih manik-manik itu supaya setiap gelang mempunyai 6 biji manik berbentuk bunga dan 3 biji manik berbentuk rama-rama?

How many ways can Husna choose the beads so that each bracelet contains 6 flower beads and 3 butterfly beads.

[2 markah / 2 marks]

Jawapan / *Answer*:

11. Balqis, Hanim dan Nurul membeli beberapa barang untuk persiapan Hari Raya. Balqis membeli 3 peket dodol, 2 peket serunding ayam dan sekotak gula-gula dengan harga RM90.00. Hanim membeli 4 peket dodol, 3 peket serunding ayam dan sekotak gula-gula dengan harga RM122.00. Nurul membeli 6 peket dodol, sepeket serunding ayam dan 4 kotak gula-gula dengan harga RM148.00. Biar x , y , z masing-masing mewakili harga sepeket dodol, sepeket serunding ayam dan sekotak gula-gula.

Balqis, Hanim dan Nurul bought some items for the preparation of Hari Raya. Balqis bought 3 packets of 'dodol', 2 packets of chicken floss and a box of candy for RM 90.00. Hanim bought 4 packets of 'dodol', 3 packets of chicken floss and a box of candy for RM 122.00. Nurul bought 6 packets of "dodol', a packet of chicken floss and 4 boxes of candy for RM 148.00. Let x , y , z each represent the price of a packet of 'dodol', a packet of chicken floss and a box of candy.

- (a) Bina satu sistem persamaan linear.

Construct a system of linear equation.

[2 markah/2marks]

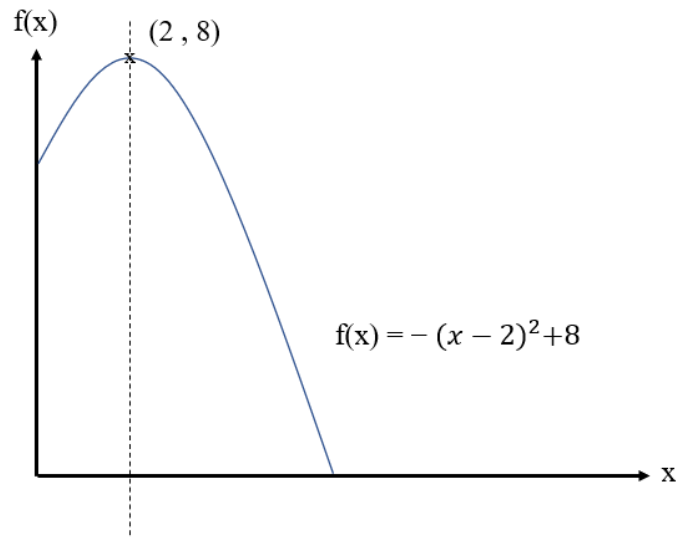
- (b) Tentukan harga seunit bagi setiap barang yang dibeli.

Find the unit price of each type of item purchases.

[5 markah/5marks]

Jawapan / Answer:

12.



Rajah 8 / Diagram 8

(a)

(i) Nyatakan fungsi dalam Rajah 8 ini diskret atau selanjar.
State the function in Diagram 8 is discrete or continuous.

(ii) Tentukan domain, kodomain dan julat bagi fungsi, $f(x)$.
Determine the domain, codomain and the range of the function, $f(x)$.

[4 markah/4marks]

(b) Diberi $g(x) = \frac{px-q}{rx}$, dengan keadaan p , q dan r ialah pemalar.
Given that $g(x) = \frac{px-q}{rx}$, such that p , q and r are constants.

(i) Ungkapkan $g^{-1}(x)$ dalam sebutan p , q dan r .

Express $g^{-1}(x)$ in terms of p , q and r .

(ii) Seterusnya, tentukan $g^{-1}(x)$ bagi $g(x) = \frac{2x+1}{3x}$, $x \neq 0$.
Hence, determine the $g^{-1}(x)$ of $g(x) = \frac{2x+1}{3x}$, $x \neq 0$.

[3 markah/3marks]

Jawapan / *Answer*:

Bahagian B
Section B

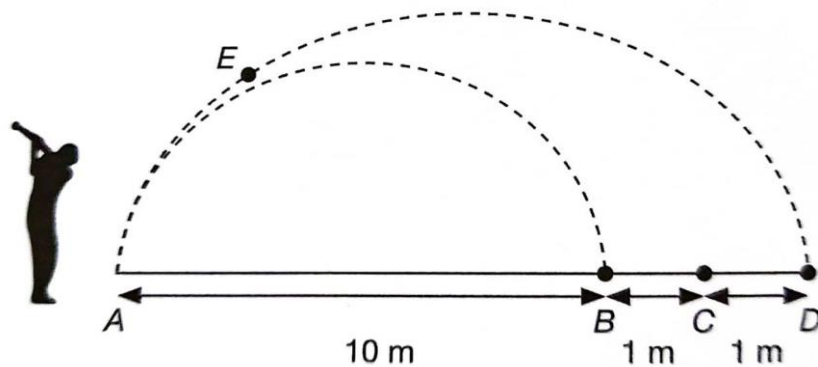
[16 markah / 16 marks]

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

*Answer any **two** questions from this section*

13. Dalam satu latihan golf di sebuah dewan, Hanif memukul bola golf dari titik A dan ia jatuh ke dalam lubang pertama, titik B, seperti dalam Rajah 9.

In a golf practice in a hall, Hanif hits the golf ball from point A and it drops into the first hole, point B, as shown in Diagram 9.



Rajah 9 / Diagram 9

Fungsi $h(x) = -x^2 + 10x$ mewakili ketinggian yang dicapai bola golf, dalam meter. Ketinggian bumbung dewan itu ialah 50 m.

The function $h(x) = -x^2 + 10x$ represents the height achieved by the golf ball, in meters.

The height of the roof of the hall is 50 m.

- (a) Ungkapkan $h(x)$ dalam bentuk $h(x) = a(x + p)^2 + q$, di mana a , p dan q ialah pemalar.

Express $h(x)$ in the form $h(x) = a(x + p)^2 + q$, where a , p and q are constants.

[3 markah/3marks]

- (b) Nyatakan ketinggian maksimum yang dicapai oleh bola itu dalam meter.

State the maximum height achieved by the ball in meters.

[1 markah/1marks]

- (c) Jika Hanif mahu bola golf itu jatuh ke dalam lubang ketiga, titik D, laluan bola itu akan melalui titik E yang berada 4 m di sebelah kanan titik A dan 32 m tegak di atas dari tanah. Tentukan sama ada bola yang dipukul oleh Hanif boleh sampai ke bumbung dewan itu dan berikan alasan anda.

If Hanif wants the golf ball to drop into the third hole, point D, the path of the ball will pass through point E which is 4 m to the right of point A and 32 m vertically above from the ground. Determine whether the ball hit by Hanif can reach the roof of the hall and give your reasons.

[4 markah/4marks]

Jawapan / Answer:

- 14 (a)(i) Jika a ialah sebutan pertama dan d ialah beza sepunya bagi suatu jangjang aritmetik, tunjukkan bahawa hasil tambah n sebutan pertama bagi jangjang itu ialah $S_n = \frac{n}{2}[2a + (n - 1)d]$

If a is the first term and d is the common difference of an arithmetic progression, shows that the sum of the first n terms of the progression is

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

[3 markah/3marks]

- (ii) Diberi suatu jangjang aritmetik 3, 7, 11, 15, cari hasil tambah n sebutan pertama.

Given an arithmetic progression 3, 7, 11, 15, ... find the sum of the first n terms.

[2 markah/2marks]

- (b) Selesaikan persamaan
Solve the equation

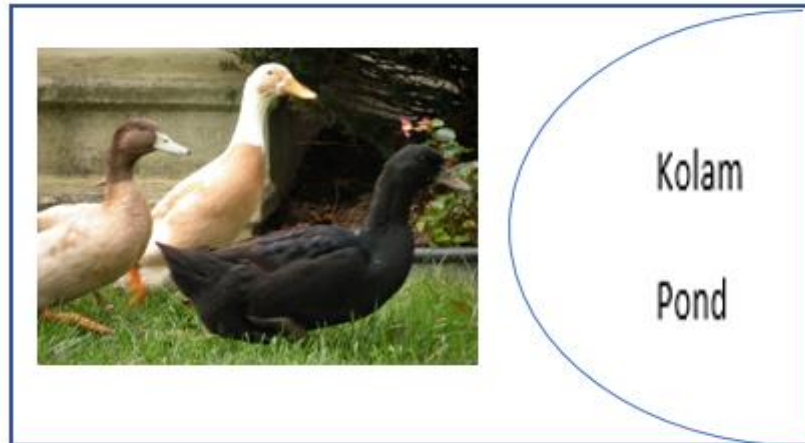
$$3 + 7 + 11 + 15 + \dots + x = 1275$$

[3 markah/3marks]

Jawapan / Answer:

15. Pak Samad mempunyai sebidang tanah berbentuk segi empat di mana yang berbentuk semi bulatan adalah kolam air dan bakinya adalah kawasan menternak itik seperti yang ditunjukkan dalam Rajah 10 dan kawasan tersebut dipagari dengan dawai sepanjang 120 m. Diberi lebar segi empat adalah $2x$ m .

Pak Samad owns a piece of rectangular land in which the semicircle is a pond, and the rest of the area is used to rear ducks as shown in the Diagram 10 and this area is fenced with wire of 120 m length. Given the width of the land is $2x$ m.



Rajah 10 / Diagram 10

- (a) Tunjukkan bahawa luas kawasan ternakan itik , dalam m^2 , diberi oleh
Show that the area to keep the ducks, in m^2 , is given by

$$L = 120x - 2x^2 - \frac{3}{2}\pi x^2$$

[3 markah/3marks]

- (b) Cari nilai bagi x , bila L maksimum, dalam sebutan π
Find the value of x , when L is maximum, in term of π .

[2 markah/2marks]

- (c) Semasa musim kemarau, kolam air mengalami penyejatan di mana kadar penyusutan permukaan kolam ialah $0.02 \text{ m}^2\text{s}^{-1}$ Hitungkan kadar perubahan jejari pada ketika jejari permukaan kolam ialah 8 m, dalam sebutan π .

During the drought season, the surface water of the pond is reduced with the rate of $0.02 \text{ m}^2\text{s}^{-1}$ due to evaporation. Find the rate of change in radius at the instant when the radius is 8 m, in terms of π

[3 markah/3marks]

Jawapan / *Answer*:

KERTAS PEPERIKSAAN TAMAT
END OF QUESTION PAPER

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 | .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 |
| | | | | .0 ² 990 | .0 ² 964 | .0 ² 939 | .0 ² 914 | | | | 3 | 5 | 8 | 10 | 13 | 15 | 18 | 20 | 23 |
| | | | | | | | | .0 ² 889 | .0 ² 866 | .0 ² 842 | 2 | 5 | 7 | 9 | 12 | 14 | 16 | 16 | 21 |
| 2.4 | .0 ² 820 | .0 ² 798 | .0 ² 776 | .0 ² 755 | .0 ² 734 | | | | | | 2 | 4 | 6 | 8 | 11 | 13 | 15 | 17 | 19 |
| | | | | | | .0 ² 714 | .0 ² 695 | .0 ² 676 | .0 ² 657 | .0 ² 639 | 2 | 4 | 6 | 7 | 9 | 11 | 13 | 15 | 17 |
| 2.5 | .0 ² 621 | .0 ² 604 | .0 ² 587 | .0 ² 570 | .0 ² 554 | .0 ² 539 | .0 ² 523 | .0 ² 508 | .0 ² 494 | .0 ² 480 | 2 | 3 | 5 | 6 | 8 | 9 | 11 | 12 | 14 |
| 2.6 | .0 ² 466 | .0 ² 453 | .0 ² 440 | .0 ² 427 | .0 ² 415 | .0 ² 402 | .0 ² 391 | .0 ² 379 | .0 ² 368 | .0 ² 357 | 1 | 2 | 3 | 5 | 6 | 7 | 9 | 9 | 10 |
| 2.7 | .0 ² 347 | .0 ² 336 | .0 ² 326 | .0 ² 317 | .0 ² 307 | .0 ² 298 | .0 ² 289 | .0 ² 280 | .0 ² 272 | .0 ² 264 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 2.8 | .0 ² 256 | .0 ² 248 | .0 ² 240 | .0 ² 233 | .0 ² 226 | .0 ² 219 | .0 ² 212 | .0 ² 205 | .0 ² 199 | .0 ² 193 | 1 | 1 | 2 | 3 | 4 | 4 | 5 | 6 | 6 |
| 2.9 | .0 ² 187 | .0 ² 181 | .0 ² 175 | .0 ² 169 | .0 ² 164 | .0 ² 159 | .0 ² 154 | .0 ² 149 | .0 ² 144 | .0 ² 139 | 0 | 1 | 1 | 2 | 2 | 3 | 3 | 4 | 4 |
| 3.0 | .0 ² 135 | .0 ² 131 | .0 ² 126 | .0 ² 122 | .0 ² 118 | .0 ² 114 | .0 ² 111 | .0 ² 107 | .0 ² 104 | .0 ² 100 | 0 | 1 | 1 | 2 | 2 | 2 | 3 | 3 | 4 |

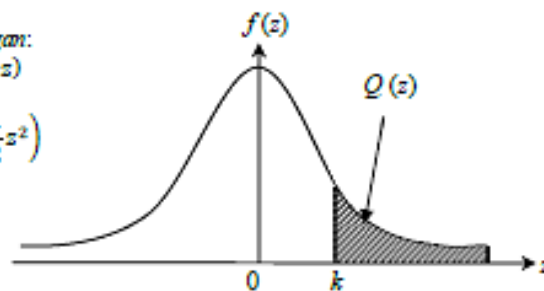
For negative z use relation:

Bagi z negatif guna hubungan:

$$Q(z) = 1 - Q(-z) = P(-z)$$

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

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



Example / Contoh:

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

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

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

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