



TRIAL NEGERI 2022 PROBABILITY DISTRIBUTION OR TABURAN KEBARANGKALIAN KSSM ADD MATHS SPM



SIR VEN



Q1: PERLIS

- a) Dalam suatu kampung, didapati kebarangkalian belia ialah p . Diberi bahawa bilangan belia mempunyai min 40 dan varians 28.

In a village it is found that the probability of youth is p . It is given that the number of youths has mean of 40 and variance of 28.

- (i) Cari nilai p .
Find the value of p .
- (ii) Jika 5 orang penduduk dipilih secara rawak, cari kebarangkalian bahawa sekurang-kurangnya 3 orang ialah belia.
If 5 residents are selected at random from the area, find the probability that at least 3 of them are youths.

[5 markah/ 5 marks]

- b) Jisim sebiji buah durian Musang King yang dihasilkan di sebuah kebun mempunyai taburan normal dengan min 3.8 kg dan sisihan piawai 700 g. Kira
The masses of Musang King durians produced in an orchard are normally distributed with mean of 3.8 kg and standard deviation of 700 g. Calculate

- (i) kebarangkalian bahawa sebiji durian yang dipilih secara rawak dari kebun itu mempunyai jisim melebihi 4.5 kg.
the probability that a durian is chosen at random from the orchard has a masses more than 4.5 kg.
- (ii) nilai m jika 68% daripada durian tersebut mempunyai jisim kurang m kg.
the value of m if 68% of the durians have masses less than m kg.

[5 markah /5 marks]

11
(a)
(i)

$$40q = 28$$

(K1)

$$\boxed{\text{N1}} \quad p = \frac{3}{10}$$

(ii)

$$\text{Guna} \quad {}^nC_r \times \left(\frac{3}{10}\right)^r \times \left(\frac{7}{10}\right)^{n-r}$$

(K1)

$$P(X \geq 3) = P(X = 3) + P(X = 4) + P(X = 5)$$

(P1)

$$0.16308$$

(N1)

(b)
(i)

$$P\left(Z > \frac{4.5-3.8}{0.7}\right)$$

(K1)

(N1)

$$0.1587$$

(ii)

$$z = \pm 0.468$$

(P1)

$$\frac{m-3.8}{0.7} = 0.468$$

(K1)

(N1)

$$m = 4.1276$$

Q2: SABK (AGAMA)

- (a) Dalam satu tinjauan yang dijalankan ke atas murid-murid di sebuah sekolah, didapati 6 daripada 10 orang murid memakai cermin mata. Jika 5 orang murid dipilih secara rawak, hitung kebarangkalian bahawa

In a survey carried out in a school, it is found that 6 out of 10 students wear glasses. If 5 students from that school are chosen at random, calculate the probability that

- (i) tepat 3 orang murid memakai cermin mata,
exactly 3 students wear glasses,
- (ii) lebih daripada 3 orang murid memakai cermin mata.
more than 3 students wear glasses.

[5 markah]

[5 marks]

- (b) Suatu pemeriksaan kesihatan dijalankan ke atas sekumpulan pekerja. Tekanan darah sekumpulan pekerja itu adalah mengikut taburan normal dengan min 130 mmHg dan sisihan piawai 16 mmHg. Bacaan tekanan darah yang melebihi 150 mmHg diklasifikasikan sebagai tekanan darah tinggi.

A group of workers are given a medical check up. The blood pressure of the workers has a normal distribution with a mean of 130 mmHg and a standard deviation of 16 mmHg. Blood pressure readings above 150 mmHg are classified as high blood pressure.

- (i) Seorang pekerja dipilih secara rawak daripada kumpulan tersebut. Cari kebarangkalian bahawa pekerja itu mempunyai tekanan darah antara 110 mmHg dan 152 mmHg.
A worker is chosen at random from the group. Find the probability that the worker has a blood pressure between 110 mmHg and 152 mmHg.
- (ii) Didapati bahawa 123 orang pekerja mempunyai tekanan darah tinggi. Cari jumlah pekerja dalam kumpulan itu.
It is found that 123 workers have high blood pressure. Find the total number of workers in the group.

[5 markah]

[5 marks]

11
(a)(i)

$$P(X=3) = {}^5C_3(0.6)^3(0.4)^2$$
$$0.3456$$

(a)(ii)

$$P(X=4)+P(X=5)$$

$${}^5C_4(0.6)^4(0.4)^1 + {}^5C_5(0.6)^5(0.4)^0$$

(menggunakan rumus Taburan Binomial)

$$0.3370$$

(b)(i)

$$P\left(\frac{110-130}{16} < Z < \frac{152-130}{16}\right)$$

$$1 - 0.1056 - 0.0845$$

$$0.8099$$

(b)(ii)

$$P(X > 150) = P\left(Z > \frac{150-130}{16}\right)$$

$$0.1056 // 0.1057$$

$$1163 // 1164 // 1165$$

Q3: MELAKA

- (a) **Pemboleh ubah X bertaburan normal dengan min 12 dan sisihan piawai σ . Diberi skor-z ialah 2.25 apabila $X=16.5$. Cari**

X is a continuous random variable which normally distributed with mean 12 and standard deviation σ . Given z-score is 2.25 when $X = 16.5$. Find

- (i) **nilai σ**
value of σ
- (ii) **nilai m apabila $P(X < m) = 0.7145$**
value of m when $P(X < m) = 0.7145$

[5 markah]

[5 marks]

- (b) **Kebarangkalian kelas 5 Arif menang perlawanan Futsal dalam perlawanan Futsal antara kelas ialah $\frac{3}{7}$. Jika kelas 5 Arif mengambil bahagian dalam 6 perlawanan, hitung kebarangkalian**

The probability of class 5 Arif winning a Futsal match between classes is $\frac{3}{7}$. If class 5 Arif participates in 6 matches, calculate the probability

- (i) **Kelas 5 Arif kalah semua perlawanan**
Class 5 Arif loss all match
- (ii) **Kelas 5 Arif menang lebih daripada 2 perlawanan**
Class 5 Arif win more than 2 matches

[5 markah]

[5 marks]

11

(a) i)

$$\frac{16.5-12}{\sigma} = 2.25$$

$$\sigma = 2$$

(a) ii)

$$\text{Skor } -z = 0.566 / 0.567$$

$$\frac{m-12}{2} = 0.566 \quad \text{atau} \quad \frac{m-12}{2} = 0.567$$

$$m = 13.13$$

(b) i)

$${}^6C_0 \left(\frac{3}{7}\right)^0 \left(\frac{4}{7}\right)^6$$

$$= 0.03482$$

(b) ii)

$$1 - P(X=0) + P(X=1) + P(X=2)$$

@

$$P(X=3) + P(X=4) + P(X=5) + P(X=6)$$

$$1 - {}^6C_0 \left(\frac{3}{7}\right)^0 \left(\frac{4}{7}\right)^6 - {}^6C_1 \left(\frac{3}{7}\right)^1 \left(\frac{4}{7}\right)^5 - {}^6C_2 \left(\frac{3}{7}\right)^2 \left(\frac{4}{7}\right)^4 \quad \text{or}$$

$${}^6C_3 \left(\frac{3}{7}\right)^3 \left(\frac{4}{7}\right)^3 + {}^6C_4 \left(\frac{3}{7}\right)^4 \left(\frac{4}{7}\right)^2 + {}^6C_5 \left(\frac{3}{7}\right)^5 \left(\frac{4}{7}\right)^1 + {}^6C_6 \left(\frac{3}{7}\right)^6 \left(\frac{4}{7}\right)^0$$

$$= 0.5147 @ 0.5148$$

Q4: TERENGGANU

- (a) Dalam suatu permainan menembak yang terletak di Taman Jaya, kebarangkalian untuk seseorang menang ialah 12.5%. Imran telah membeli tiket untuk bermain permainan itu sebanyak n kali. Kebarangkalian bagi Imran menang sekali dalam permainan itu adalah 15 kali kebarangkalian kalah dalam semua permainan.

In a shooting game at Taman Jaya, the probability of winning is 12.5%.

Imran has bought tickets to play n games. The probability for Imran to win once is 15 times the probability of losing all the games.

- (i) Cari nilai n .

Find the value of n .

- (ii) Hitung sisihan piawai bagi bilangan kemenangan.

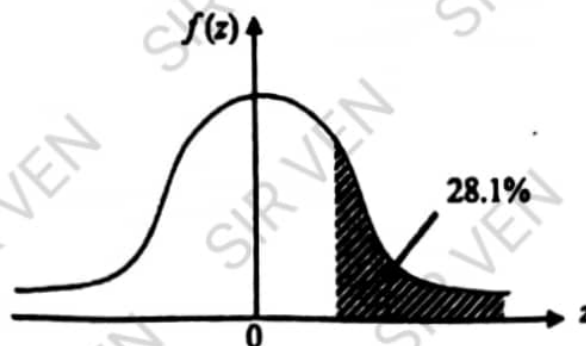
Calculate the standard deviation of the number of wins.

[5 markah]

[5 marks]

- (b) Rajah 4 menunjukkan satu graf taburan normal piawai yang mewakili isipadu air mineral dalam botol yang dihasilkan oleh sebuah kilang.

Diagram 4 shows a standard normal distribution graph representing the volume of mineral water in bottles produced by a factory.



Rajah 4 / Diagram 4

Diberi min ialah 990 cm^3 dan variansnya ialah 225 cm^6 . Jika peratus isipadu yang melebihi V ialah 28.1%, cari

It is given the mean is 990 cm^3 and the variance is 225 cm^6 . If the percentage of the volume more than V is 28.1% find

- (i) nilai V ,

the value of V ,

- (ii) kebarangkalian isipadu antara 970 cm^3 dan 1015 cm^3 .

the probability that volume between 970 cm^3 and 1015 cm^3 .

[5 markah]

[5 marks]

(a) (i) $P(X=1) = {}^nC_1 \left(\frac{1}{8}\right) \left(\frac{7}{8}\right)^{n-1}$ atau

$$P(X=0) = {}^nC_0 \left(\frac{1}{8}\right)^0 \left(\frac{7}{8}\right)^n \quad \text{K1}$$

$$n \left(\frac{1}{8}\right) \left(\frac{7}{8}\right)^{n-1} = 15 \left(\frac{7}{8}\right)^n \quad \text{selesaikan} \quad \text{K1}$$

$$n \left(\frac{1}{8}\right) = 15 \left(\frac{7}{8}\right)$$

$$n = 105$$

N1

$$(ii) \text{ sisihan piawai} = \sqrt{105 \left(\frac{1}{8}\right) \left(\frac{7}{8}\right)}$$

$$= 3.389$$

K1

N1

(b) (i) 0.58 dilihat

P1

$$\frac{V - 990}{15} = 0.58$$

K1

$$V = 998.7$$

N1

$$(ii) P(970 < X < 1015) = P\left(\frac{970 - 990}{15} < Z < \frac{1015 - 990}{15}\right)$$

K1

$$= 0.8609 - 0.8610$$

N1

Q5: KELANTAN MMIS (SET 1)

- (a) Kebarangkalian sebuah kedai memberikan baucer tunai kepada pelanggan terpilih pada suatu hari tertentu ialah $\frac{1}{4}$.

The probability of a store gives a cash voucher to a selected customer on a certain day is $\frac{1}{4}$.

Cari kebarangkalian bahawa dalam satu minggu, kedai tersebut,

Find the probability that in a week, the store,

- (i) tidak memberi sebarang baucer tunai,
do not gives any cash vouchers,
- (ii) akan memberi baucer tunai selebih-lebihnya 4 hari.
will gives cash vouchers for at most 4 days.

[5 markah]

[5 marks]

- (b) Umur bagi satu kumpulan pekerja di sebuah kilang adalah mengikut taburan normal dengan min 40 tahun dan sisihan piawai σ tahun.

The age of a group of workers in a factory follows a normal distribution with mean of 40 years and a standard deviation of σ years.

- (i) Cari nilai bagi varians jika kebarangkalian seorang pekerja yang dipilih secara rawak mempunyai umur melebihi 42 tahun ialah 0.3446.

Find the value of variance if the probability that a worker chosen randomly with age more than 42 years old is 0.3446

- (ii) Diberi jumlah pekerja ialah 350 orang, hitung bilangan pekerja yang berumur antara 38 dan 45 tahun.

Given the total workers are 350, calculate the number of workers which age between 38 and 45 years.

[5 markah]

[5 marks]

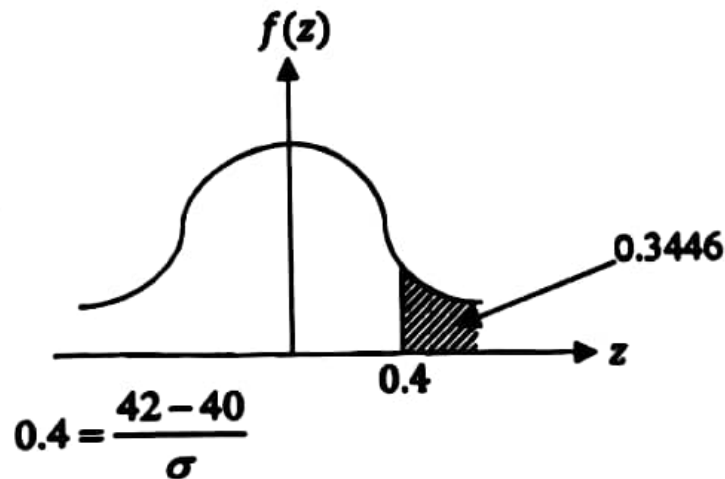
$$(a)(i) \quad {}^7C_0 \left(\frac{1}{4}\right)^0 \left(\frac{3}{4}\right)^7 \quad \text{atau} \quad {}^7C_7 \left(\frac{3}{4}\right)^7 \left(\frac{1}{4}\right)^0$$

$$0.13348$$

$$(ii) \quad 1 - \left[{}^7C_5 \left(\frac{1}{4}\right)^5 \left(\frac{3}{4}\right)^2 + {}^7C_6 \left(\frac{1}{4}\right)^6 \left(\frac{3}{4}\right)^1 + {}^7C_7 \left(\frac{1}{4}\right)^7 \left(\frac{3}{4}\right)^0 \right]$$

$$0.9871$$

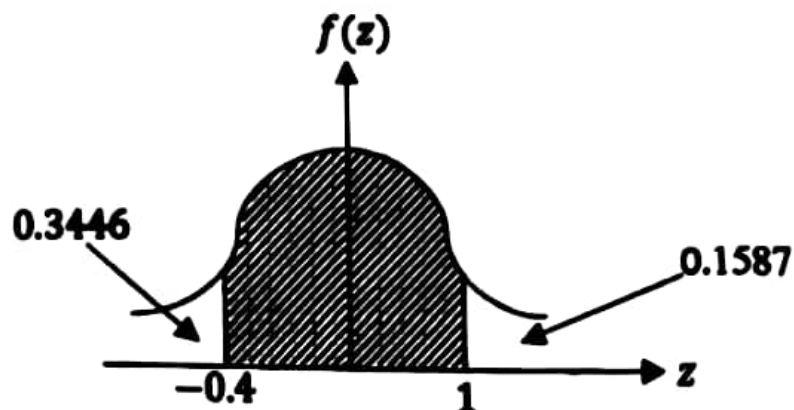
(b)(i)



$$\sigma = 5$$

$$\text{varian, } \sigma^2 = 25$$

$$(ii) \quad P\left(\frac{38-40}{5} < z < \frac{45-40}{5}\right)$$



$$\text{Luas kawasan berlerek} = 1 - 0.3446 - 0.1587$$

$$= 0.4967$$

Bil. pelajar berumur antara 38 dan 45 tahun

$$0.4967 \times 350 = 174 \text{ orang}$$

Q6: KELANTAN MIMS (SET 2)

- (a) Dalam satu kajian di sebuah kolej didapati 15% pelajar bermain futsal, sekali dalam seminggu.

In a survey carried out in a college, it is found that 15% of the students play futsal, once a week.

- (i) Jika 10 orang pelajar dipilih secara rawak, hitung kebarangkalian bahawa tepat 2 orang pelajar bermain futsal sekali dalam seminggu.

If 10 students are chosen at random, calculate the probability that exactly 2 students are play futsal once a week.

- (ii) Jika varians bagi pelajar bermain futsal sekali dalam seminggu ialah 318.75, hitung bilangan pelajar di kolej tersebut.

If the variance of the students playing futsal once a week is 318.75, calculate the number of students in that college.

[4 markah]

[4 marks]

- (b) Jisim pizza 'regular' di sebuah restoran tertabur secara normal dengan min 350 g dan sisihan piawai 100 g.

The mass of regular pizza from a restaurant follow a normal distribution with a mean of 350 g and a standard deviation of 100 g.

- (i) Jika satu pizza dipilih secara rawak daripada restoran itu, cari kebarangkalian bahawa beratnya tidak lebih daripada 380 g.

If a pizza chosen at random from the restaurant, find the probability that it's mass not more than 380 g.

- (ii) Diberi bahawa 42% daripada pizza di restoran itu melebihi m g, cari nilai m .
Given that 42% of the pizza from the restaurant have a mass of more than m g, find the value of m .

[6 markah]

[6 marks]

(a)(i)

$$P(X = 2) = {}^{10}C_2 (0.15)^2 (0.85)^8 \\ = 0.2759$$

(ii)

$$\sigma^2 = n(0.15)(0.85) = 318.75 \\ n = 2500 \text{ orang}$$

b)(i)

$$P(X < 380)$$

$$P\left(Z < \frac{380 - 350}{100}\right)$$

$$P(Z < 0.3)$$

$$1 - P(Z > 0.3)$$

$$1 - 0.3821$$

$$0.6179$$

(ii)

$$P(X > m) = 0.42$$

$$P\left(Z > \frac{m - 350}{100}\right) = 0.42$$

$$\frac{m - 350}{100} = 0.202$$

$$m = 370.2 \text{ g}$$

Q7: SELANGOR (SET 2)

(a) Sebiji dadu adil dilambung 4 kali.

A fair dice is tossed 4 times.

(i) Cari kebarangkalian mendapat skor 2 hanya sekali.

Find the probability of getting score 2 exactly once.

(ii) Dalam satu permainan tertentu, peserta yang mendapat nombor ganjil dianggap sebagai berjaya.

Cari kebarangkalian seorang peserta berjaya sekurang-kurangnya 3 kali.

In a certain game, a participant who obtains an odd number is considered successful.

Find the probability of a participant being successful at least 3 times.

[5 markah]

[5 marks]

(b) Jisim buah oren yang dijual di Pasar Raya Besar A adalah bertaburan secara normal dengan min 340 g dan sisihan piawai 30 g. Jadual 1 menunjukkan jisim dan keuntungan hasil jualan buah oren itu.

The mass of the oranges sold in Hypermarket A is normally distributed with mean of 340 g and a standard deviation of 30 g. Table 1 shows the mass and its profit when the oranges are sold.

Jisim Mass	$< 280 \text{ g}$	$280 \text{ g} \leq m \leq 350 \text{ g}$	$> 350 \text{ g}$
Keuntungan (RM) Profit (RM)	0.30	0.50	1.00

Jadual 1

Table 1

(i) Cari peratusan buah oren yang dijual dengan keuntungan yang paling banyak.

Find the percentage of oranges that are sold with the highest amount of profit.

(ii) Cari kebarangkalian sebiji oren yang dipilih mempunyai keuntungan yang paling kurang.

Find the probability that a selected orange has the least profit.

[5 markah]

[5 marks]

$$(a) \quad (i) \quad {}^4C_1 \left(\frac{1}{6}\right)^1 \left(\frac{5}{6}\right)^3 \\ = \frac{125}{324} = 0.3858$$

$$(ii) \quad {}^4C_3 \left(\frac{1}{2}\right)^3 \left(\frac{1}{2}\right)^1 \text{ ATAU } {}^4C_4 \left(\frac{1}{2}\right)^4 \left(\frac{1}{2}\right)^0 \\ {}^4C_3 \left(\frac{1}{2}\right)^3 \left(\frac{1}{2}\right)^1 + {}^4C_4 \left(\frac{1}{2}\right)^4 \left(\frac{1}{2}\right)^0 \\ = \frac{5}{16} = 0.3125$$

$$(b) \quad (i) \quad P\left(Z > \frac{350-340}{30}\right) \\ = 0.3696 \\ = 36.96\%$$

$$(ii) \quad P\left(Z < \frac{280-340}{30}\right) \\ = 0.0228$$

Q8: SELANGOR(SET 1)

- (a) Sebuah kotak mengandungi 2 jenis gula-gula, A dan B , dalam nisbah $1 : 2$. Lima biji gula-gula dipilih secara rawak satu demi satu dengan pengembalian.

Hitung kebarangkalian bahawa

A box contains 2 types of sweets, A and B , in the ratio of $1 : 2$. Five sweets are chosen one at a time at random, with replacement.

Calculate the probability that

- (i) tepat 4 biji gula-gula jenis B yang dipilih,
exactly 4 type B sweets are chosen,
- (ii) lebih daripada 2 biji gula-gula jenis A yang dipilih.
more than 2 type A sweets are chosen.

[5 markah]

[5 marks]

- (b) Panjang sejenis serangga bertaburan secara normal dengan min 2 cm dan varians 0.09 cm^2 .

The lengths of a type of insects are normally distributed with a mean of 2 cm and a variance of 0.09 cm^2 .

Cari

Find

- (i) peratusan serangga yang mempunyai panjang lebih daripada 2.28 cm,
the percentage of insects that have a length of more than 2.28 cm,
- (ii) nilai m jika 15% daripada serangga itu mempunyai panjang kurang daripada m cm.
the value of m if 15% of the insects have a length of less than m cm.

[5 markah]

[5 marks]

(a)

$$(i) \quad {}^5C_4 \left(\frac{2}{3}\right)^4 \left(\frac{1}{3}\right)^1 \\ = \frac{80}{243} = 0.3292$$

$$(ii) \quad {}^5C_3 \left(\frac{1}{3}\right)^3 \left(\frac{2}{3}\right)^2 \text{ ATAU } {}^5C_4 \left(\frac{1}{3}\right)^4 \left(\frac{2}{3}\right)^1 \\ \text{ATAU } {}^5C_5 \left(\frac{1}{3}\right)^5 \left(\frac{2}{3}\right)^0 \text{ ATAU } \\ {}^5C_2 \left(\frac{2}{3}\right)^2 \left(\frac{1}{3}\right)^3 \text{ ATAU } {}^5C_1 \left(\frac{2}{3}\right)^1 \left(\frac{1}{3}\right)^4 \\ \text{ATAU } {}^5C_0 \left(\frac{2}{3}\right)^0 \left(\frac{1}{3}\right)^5 \\ {}^5C_3 \left(\frac{1}{3}\right)^3 \left(\frac{2}{3}\right)^2 + {}^5C_4 \left(\frac{1}{3}\right)^4 \left(\frac{2}{3}\right)^1 + {}^5C_5 \left(\frac{1}{3}\right)^5 \left(\frac{2}{3}\right)^0 \\ \text{ATAU} \\ {}^5C_2 \left(\frac{2}{3}\right)^2 \left(\frac{1}{3}\right)^3 + {}^5C_1 \left(\frac{2}{3}\right)^1 \left(\frac{1}{3}\right)^4 + {}^5C_0 \left(\frac{2}{3}\right)^0 \left(\frac{1}{3}\right)^5 \\ = \frac{17}{81} = 0.2099$$

(b)

$$(i) \quad P\left(Z > \frac{2.28-2}{0.3}\right) \\ = 0.1753 // 0.1754 \text{ (daripada Jadual)} \\ = 17.53\% // 17.54\%$$

$$(ii) \quad P\left(Z < \frac{m-2}{0.3}\right) = 0.15 \text{ (terima } \leq) \\ \frac{m-2}{0.3} = -1.036 \\ m = 1.689$$

Q9: KEDAH

- (a) Pembolehubah rawak $X \sim B(n, p)$ mempunyai min 5 dan varians 4.

The random variable $X \sim B(n, p)$ has a mean of 5 and a variance of 4.

- (i) Cari nilai bagi n dan p .

Find the values of n and of p .

- (ii) Dengan menggunakan jawapan pada (a)(i), cari $P(X = 2)$.

Using the answers in (a)(i), find $P(X = 2)$.

[5 markah/marks]

- (b) Sebuah ladang menghasilkan buah tembikai. Jadual 11 menunjukkan penggredan buah tembikai berdasarkan jisimnya.

An orchard produces watermelons. The table 11 shows the grading of the watermelons according to their masses.

Gred Grade	A	B	C
Jisim, X (kg) Mass, X (kg)	$X > 6.5$	$3.5 < X \leq 6.5$	$m < X \leq 3.5$

Jadual 11

Table 11

Diberi bahawa jisim buah tembikai yang dihasilkan oleh ladang ini bertabur secara normal dengan min 4.5 kg dan varians 1.21 kg^2 .

It is given that the masses of watermelons produced in the orchard are normally distributed with a mean of 4.5 kg and a variance of 1.21 kg^2 .

- (i) Jika buah tembikai diambil secara rawak, cari kebarangkalian bahawa buah tembikai itu ialah gred B.

If a watermelon is chosen at random, find the probability that it is from the grade B.

[2 markah/marks]

- (ii) Jika 98% daripada buah tembikai boleh digredkan, cari nilai m .

If 98% of the watermelons can be graded, find of m .

[3 markah/marks]

(a)(i)	$5q = 4$ $q = \frac{4}{5}$ $p = \frac{1}{5} \quad \text{N1}$ $n\left(\frac{1}{5}\right)\left(\frac{4}{5}\right) = 4$ $n = 25 \quad \text{N1}$
(a)(ii)	${}^{25}C_2 \left(\frac{1}{5}\right)^2 \left(\frac{4}{5}\right)^{23} \quad \text{K1}$ $0.0708 \quad \text{N1}$
(b)(i)	$P\left(\frac{3.5 - 4.5}{1.1} < Z \leq \frac{6.5 - 4.5}{1.1}\right) \quad \text{K1}$ $0.7837 \quad \text{N1}$
(b)(ii)	$P(Z < m) = 0.02 \text{ or } P(Z > m) = 0.98$ $Z = 2.054 \quad \text{N1}$ $-2.054 = \frac{m - 4.5}{1.1} \quad \text{K1}$ $2.241 \text{ kg} \quad \text{N1}$

Q10: PERAK

- (a) Dalam satu tinjauan yang dijalankan oleh sebuah sekolah rendah di Sungai Siput, didapati 3 daripada 7 orang murid membaca lebih daripada 3 buah buku cerita dalam sebulan.

In a survey held by a primary school in Sungai Siput, 3 out of 7 pupils read more than 3 story books a month.

- (i) Jika 8 orang murid dipilih secara rawak daripada sekolah itu, cari kebarangkalian bahawa sekurang-kurangnya 2 orang murid membaca lebih daripada 3 buah buku cerita dalam sebulan

If 8 pupils are selected randomly from the school, find the probability that at least 2 pupils read more than 3 story books a month.

[3 markah]

[3 marks]

- (ii) Jika sisihan piawai bilangan murid yang membaca lebih daripada 3 buku cerita dalam sebulan adalah 11.5, hitung jumlah bilangan murid dalam sekolah rendah itu.

If the standard deviation of the number of pupils who read more than 3 story books a month is 11.5, calculate the total number of pupils in that primary school.

[2 markah]

[2 marks]

- (b) Di sebuah sekolah menengah di Sungai Siput, 56 orang murid menduduki satu Ujian Diagnostik Matematik Tambahan. Markah yang diperolehi oleh murid-murid adalah bertabur secara normal dengan min 40 markah dan varians 144 markah.

In a secondary school in Sungai Siput, 56 pupils sat for an Additional Mathematics Diagnostic Test. The marks obtained by the pupils are normally distributed with a mean of 40 marks and variance of 144 marks.

- (i) Dalam ujian diagnostik itu, murid yang mendapat markah di antara 40 hingga 60 markah dikategorikan dalam kumpulan sederhana. Jika seorang murid dipilih secara rawak, cari kebarangkalian bahawa murid itu berada dalam kumpulan sederhana.

In the diagnostic test, the pupils who obtained marks between 40 and 60 marks are categorized in intermediate group. If a pupil is chosen at random, find the probability that the pupil is in the intermediate group.

[2 markah]

[2 marks]

- (ii) Diberi bahawa 58% murid yang menduduki ujian diagnostik itu lulus. Hitung markah minimum untuk lulus dalam ujian diagnostik itu.

Given that 58% of the pupils that sat the diagnostic test pass the test. Calculate the minimum mark for the pupils to pass in the diagnostic test.

[3 markah]

[3 marks]

9 (a)(i)

$${}^8C_0 \left(\frac{3}{7}\right)^0 \left(\frac{4}{7}\right)^8 \text{ atau } {}^8C_1 \left(\frac{3}{7}\right)^1 \left(\frac{4}{7}\right)^7$$
$$1 - {}^8C_0 \left(\frac{3}{7}\right)^0 \left(\frac{4}{7}\right)^8 - {}^8C_1 \left(\frac{3}{7}\right)^1 \left(\frac{4}{7}\right)^7$$
$$0.9204$$

(a)(ii)

$$\sqrt{n \left(\frac{3}{7}\right) \left(\frac{4}{7}\right)} = 11.5$$

$$n = 540$$

(b)(i)

$$\frac{40 - 40}{12} \text{ atau } \frac{60 - 40}{12}$$

$$0.4522$$

(b)(ii)

$$0.202$$

$$\frac{m - 40}{12} = -0.202$$

$$m = 37.58$$

Q11: PAHANG

(a) Kebarangkalian seorang murid berjalan kaki ke sekolah ialah p . Suatu sampel 6 orang murid dipilih secara rawak.

The probability of a student walks to school is p . A sample of 6 students is selected at random.

(i) Jika kebarangkalian bagi kesemua murid itu berjalan kaki ke sekolah ialah 0.04666, cari nilai p .

If the probability of all the students walk to school is 0.04666, find the value of p .

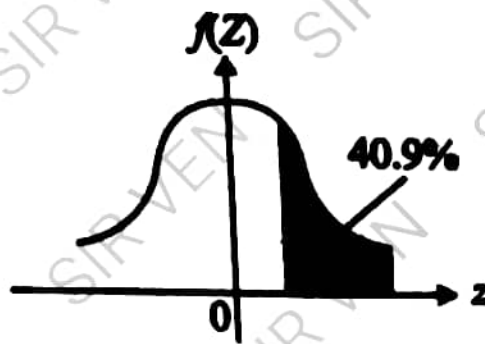
[3 markah/marks]

(ii) Cari kebarangkalian bahawa lebih daripada 4 orang murid berjalan kaki ke sekolah.

Find the probability that more than 4 students walk to school.

[2 markah/marks]

(b)



Rajah 5 / Diagram 5

Rajah 5 menunjukkan satu graf taburan normal piawai yang mewakili isipadu sos cili dalam botol yang dihasilkan oleh sebuah kilang.

Diagram 5 shows a standard normal distribution graph representing the volume of chili souce in bottles produced by a factory.

Diberi bahawa min ialah 900m^3 dan variansnya ialah 289m^6 .

Jika peratus isipadu yang melebihi V ialah 40.9%, cari

It is given that the mean is 900m^3 and variance is 289m^6 .

If the percentage of volume more than V is 40.9%,

Cari/find

(i) nilai bagi V ,
the value of V ,

[2 markah/marks]

(ii) kebarangkalian bahawa isipadu antara 866m^3 dan 951m^3 .

the probability that the volume between 866m^3 and 951m^3 .

[3 markah/marks]

(a)(i)	(i) $P(X = 6) = {}^6C_6(p)^6(1-p)^0 = 0.04666$ K1 $p^6 = 0.04666$ $6 \log_{10} p = \log_{10} 0.04666$ K1 $\log_{10} p = \frac{\log_{10} 0.04666}{6}$ $p = 0.6$ N1
(a)(ii)	$P(X > 4) = P(X = 5) + P(X = 6)$ $= {}^6C_5(0.6)^5(0.4)^1 + {}^6C_6(0.6)^6(0.4)^0$ K1 $= 0.23328$ N1
(b)(i)	(i) $P(X > V) = 0.409$ $P\left(z > \frac{V-900}{17}\right) = 0.409$ K1 $\frac{V-900}{17} = 0.23$ $V = 903.91$ N1
(b)(ii)	$P(866 < X < 951)$ $= P\left(\frac{866-900}{17} < z < \frac{951-900}{17}\right)$ K1 $= P(-2 < z < 3) = 1 - P(z < -2) - P(z > 3)$ K1 $= 0.9759$ N1

Q12: NEGERI SEMBILAN

- (a) Dalam satu kaji selidik yang dijalankan di sebuah kawasan perumahan, $\frac{3}{5}$ daripada penduduk itu mempunyai talian Wi-Fi di rumah. Satu sampel yang terdiri daripada 10 orang dipilih secara rawak dari kawasan perumahan itu.

In a survey conducted at a housing area, $\frac{3}{5}$ of the residents have Wi-Fi line at home. A sample of 10 people was randomly selected from the housing area.

- (i) Cari kebarangkalian bahawa tidak kurang daripada 3 orang mempunyai talian Wi-Fi di rumah.

Find the probability that not less than 3 people have Wi-Fi line at home.

- (ii) Jika varians penduduk yang mempunyai talian Wi-Fi ialah 300, berapakah bilangan penduduk di kawasan perumahan itu?

If the variance of the residents having Wi-Fi line is 300, what is the total residents of the housing area?

[5 markah]

[5 marks]

- (b) Syarikat telekomunikasi Maxcom menyediakan pelan Wi-Fi rumah, mengikut bajet penduduk kawasan perumahan itu. Jadual 2 menunjukkan beberapa pakej yang digunakan penduduk kawasan perumahan itu.

The telecommunication company Maxcom provides home Wi-Fi plan according to the budget of the residents in the housing area. Table 2 shows some of the packages used by the residents.

Pakej Package	A	B	C
Kelajuan, x dalam Mbps Speed, x in Mbps	$x \leq 30$	$30 < x \leq 50$	$50 < x \leq h$

Jadual 2

Table 2

Diberi bahawa kelajuan pelan Wi-Fi rumah mempunyai satu taburan normal dengan min 48 Mbps dan varians 42.25 Mbps^2 .

It is given that the speed of home Wi-Fi plan has a normal distribution with a mean of 48 Mbps and variance of 42.25 Mbps^2 .

- (i) Cari kebarangkalian penduduk kawasan perumahan ini memilih pakej B.

Find the probability of the residents of the housing area choose package B.

- (ii) Jika 8% orang penduduk memilih kelajuan melebihi h , cari nilai h .

If 8% of the residents choose speed more than h , find the value of h .

[5 markah]

[5 marks]

$$(a) \quad {}^{10}C_2 \left(\frac{3}{5}\right)^2 \left(\frac{2}{5}\right)^8 \text{ atau } {}^{10}C_1 \left(\frac{3}{5}\right)^1 \left(\frac{2}{5}\right)^9 \text{ atau } {}^{10}C_0 \left(\frac{3}{5}\right)^0 \left(\frac{2}{5}\right)^{10}$$

$$(i) \quad 1 - \left[{}^{10}C_2 \left(\frac{3}{5}\right)^2 \left(\frac{2}{5}\right)^8 + {}^{10}C_1 \left(\frac{3}{5}\right)^1 \left(\frac{2}{5}\right)^9 + {}^{10}C_0 \left(\frac{3}{5}\right)^0 \left(\frac{2}{5}\right)^{10} \right]$$

$$0.9877$$

$$(ii) \quad 0.6 \times 0.4 \times n = 300$$

$$1250$$

$$(b) \quad \frac{30 - 48}{6.5} \text{ atau } \frac{50 - 48}{6.5}$$

$$(i) \quad \frac{30 - 48}{6.5} \text{ atau } \frac{50 - 48}{6.5}$$

$$0.6181 // 0.6180$$

$$(ii) \quad P(X > h) = 0.08 \text{ atau } z = 1.406 // 1.405$$

$$\frac{h - 48}{6.5} = 1.406 // 1.405$$

$$57.14 // 57.13$$

Q13: KELANTAN

Satu tinjauan dijalankan di Kampung Perdana berkenaan remaja berumur 18 hingga 21 tahun yang layak menjadi pemilih secara automatik bagi pilihanraya umum akan datang.

A survey was conducted in Kampung Perdana regarding teenagers aged 18 to 21 who are eligible to be automatic voters for the next general election.

- (a) Didapati bahawa min bilangan remaja berumur 18 hingga 21 ialah 150, sisihan piawainya ialah 9.5 dan kebarangkalian seorang penduduk dikategorikan sebagai remaja berumur 18 hingga 21 tahun ialah p

It was found that the mean number of teenagers aged 18 to 21 is 150, the standard deviation is 9.5 and the probability of a resident being categorized as a teenager aged 18 to 21 years is p

- (i) Cari nilai p

Find the value of p .

- (ii) Jika 10 orang penduduk dari Kampung Perdana dipilih secara rawak, cari kebarangkalian lebih daripada 2 orang penduduk bukan remaja berumur 18 hingga 21.

If 10 residents from Kampung Perdana are randomly selected, find the probability that more than 2 residents are not teenagers aged 18 to 21.

[6 markah]

[6 marks]

- (b) Umur pelanggan sebuah restoran di Kampung Perdana adalah mengikut taburan normal dengan min 34.5 dan sisihan piawai 12.75. Sebagai kempen kesedaran tanggungjawab pengundi, restoran berkenaan mengagihkan baucar makanan yang kepada pelanggan yang berumur 18 hingga 21, hitung bilangan baucar makanan yang akan diagih oleh pemilik restoran itu sekiranya terdapat 500 orang pengunjung pada hari tersebut.

The age of customers of a restaurant in Kampung Perdana follows a normal distribution with a mean of 34.5 and a standard deviation of 12.75. As a voter responsibility awareness campaign, the restaurant distributed food vouchers to customers aged 18 to 21, calculate the number of food vouchers distributed by the owner of the restaurant if there were 500 visitors that day.

[4 markah]

[4 marks]

(a) ${}^{10}C_8(0.3983)^8(0.6017)^2$ atau ${}^{10}C_9(0.3983)^9(0.6017)^1$
(ii) atau ${}^{10}C_{10}(0.3983)^{10}(0.6017)^0$

$$1 - {}^{10}C_8(0.3983)^8(0.6017)^2 - {}^{10}C_9(0.3983)^9(0.6017)^1 - {}^{10}C_{10}(0.3983)^{10}(0.6017)^0$$

0.9881

(b) $z = \frac{18 - 34.5}{12.75}$ atau $z = \frac{21 - 34.5}{12.75}$

$$P(18 < X < 21) = P(z < -1.059) - P(z < -1.294)$$

$$= 0.1448 - 0.0978$$

Baucar = 0.047×500

24@25

Q14: SBP (ASRAMA)

Dalam satu peperiksaan percubaan yang diduduki oleh 190 orang murid di sebuah sekolah, markah untuk mata pelajaran Matematik Tambahan bertabur secara normal dengan min 45 dan sisihan piawai 10.

Pengetua sekolah bercadang memberikan token penghargaan kepada murid yang mendapat 70 markah ke atas, manakala murid yang mendapat 39 markah dan ke bawah perlu menduduki peperiksaan semula.

In a trial exam taken by 190 students in a school, the marks for the Additional Mathematics subject were normally distributed with a mean of 45 and a standard deviation of 10.

The school principal plans to give tokens of appreciation to students who get 70 marks and above, while students who get 39 marks and below will have to resit for the exam.

- (a) Cari kebarangkalian seorang murid dipilih secara rawak akan diberikan token penghargaan.
Find the probability that a student selected at random will be given a token of appreciation.

[2 markah]

[2 marks]

- (b) Hitung bilangan murid yang perlu menduduki peperiksaan semula.
Calculate the number of students who have to resit the exam.

[3 markah]

[3 marks]

- (c) Didapati 35% daripada murid mendapat markah di antara m dan 45.
Cari nilai m .

It was found that 35% of the students get marks between m and 45.

Find the value of m .

[3 markah]

[3 marks]

Q15: JOHOR

- (a) Diketahui bahawa 10% daripada telefon bimbit yang dihasilkan oleh sebuah kilang adalah rosak. Cari kebarangkalian bahawa daripada 8 buah telefon bimbit yang dipilih secara rawak,

It is found that 10% of the mobile phones produced in a factory are spoilt. Find the probability that out of 8 mobile phones chosen randomly,

- (i) tepat 3 telefon bimbit rosak.
exactly 3 mobile phones are spoilt.
- (ii) lebih daripada 5 telefon bimbit dalam keadaan baik.
more than 5 mobile phones are in good condition.

[5 markah/ marks]

- (b) Dalam pertandingan Explorace yang disertai oleh 600 pelajar, masa yang diambil untuk menghabiskan perlumbaan adalah bertabur secara normal dengan min 25 minit dan sisihan piawai 8 minit. Peserta tidak akan diberi sebarang mata jika mereka mengambil masa lebih daripada 35 minit untuk menghabiskan perlumbaan .

In an Explorace competition participated by 600 students, the time taken to complete the race follows a normal distribution with a mean of 25 minutes and a standard deviation of 8 minutes. Participants will not be given any points if they take more than 35 minutes to complete the race.

- (i) Jika seorang peserta dipilih secara rawak, cari kebarangkalian bahawa peserta itu tidak mendapat sebarang mata.

If a participant is chosen at random, find the probability that the participant does not get any point.

- (ii) Piala akan hadiahkan kepada 100 peserta pertama yang mengambil masa kurang daripada t minit untuk menghabiskan perlumbaan. Cari nilai t .

Trophies were awarded to the first 100 participants who took less than t minutes to complete the race. Find the value of t .

[5 markah/ marks]

(a) (i)

$$P(X = 3) = {}^8C_3(0.1)^3(0.9)^5$$

$$= 0.03307$$

$$(ii) P(X > 5) = P(X = 6) + P(X = 7) + P(X = 8)$$

$$= {}^8C_6(0.9)^6(0.1)^2 + {}^8C_7(0.9)^7(0.1)^1 + {}^8C_8(0.9)^8(0.1)^0$$

$$= 0.9619$$

$$(b) (i) P(X > 35)$$

$$= P\left(Z > \frac{35-25}{8}\right)$$

$$= P(z > 1.25)$$

$$= 0.1056$$

$$(ii) \frac{100}{600} = 0.1667$$

$$P(X < t) = 0.1667$$

$$P\left(Z < \frac{t-25}{8}\right) = 0.1667$$

$$\frac{t-25}{8} = -0.967$$

$$t = 17.264$$

Q16: YIK KELANTAN

- (a) Kejayaan menjaring gol oleh seorang pemain bola jaring ialah 80%.

The success of scoring a goal by a netball player is 80%.

- (i) Cari kebarangkalian bahawa percubaan menjaringkan gol tidak melebihi 3 kali daripada 8 percubaan.

Find the probability that an attempt to score a goal does not exceed 3 times out of 8 attempts.

- (ii) Cari bilangan minimum percubaan pemain itu supaya kebarangkalian Berjaya menjaringkan gol sekurang-kurangnya sekali ialah 0.92.

Find the minimum number of attempts by the player so that the probability of succeeding in scoring at least once is 0.92.

[5 markah]

[5 marks]

- (b) Jisim emas, x kg yang dikeluarkan oleh satu kilang bertaburan secara normal. Skor piawainya untuk $x = 10$ kg dan $x = 12$ kg masing-masing ialah -1 dan 2.

The mass of gold, x kg produced by a factory is normally distributed. Its standard scores for $x = 10$ kg and $x = 12$ kg are and -1 and 2.

- (i) Cari min dan sisihan piawai.

Find the mean and standard deviation.

- (ii) Seterusnya cari peratusan emas mempunyai jisim di antara 9 kg dan 11 kg.

Next, find the percentage of gold that has a mass between 9 kg and 11 kg.

[5 markah]

[5 marks]

- (a) Didapati bahawa kebarangkalian seorang pesakit mengalami kesan sampingan apabila mengambil ubat-ubatan baharu ialah p .

It is found that the probability that a patient will experience side effect while taking new medications is p .

- (i) Diberi bilangan pesakit yang mengalami kesan sampingan apabila mengambil ubat-ubatan mempunyai min 20 dan varians 16, cari nilai p .

Given the number of patients who experience side effect while taking the new medication has a mean of 20 and a variance of 16, find the value of p .

- (ii) Jika 10 pesakit dipilih secara rawak, cari kebarangkalian bahawa 3 pesakit mengalami kesan sampingan.

If 10 patients are selected at random, find the probability that 3 patients will experience the side effect.

[4 markah]

[4 marks]

- (b) Tekanan darah diastolik untuk seorang wanita di sebuah daerah tertentu adalah mengikut taburan normal dengan min μ mmHg dan sisihan piawai 50 mmHg. Jika seorang wanita dipilih secara rawak, didapati kebarangkalian tekanan darah diastolik kurang daripada 72 mmHg ialah 0.4364.

The diastolic blood pressure for a woman in a certain district follows a normal distribution with a mean μ mmHg and a standard deviation of 50 mmHg. If a woman is randomly selected, it is found that the probability that diastolic blood pressure less than 72 mmHg is 0.4364.

- (i) Cari nilai μ .

Find the value of μ .

- (ii) Rawatan khas akan diberikan kepada wanita yang mempunyai tekanan darah diastolik melebihi 144.1 mmHg. Cari kebarangkalian wanita yang layak mendapat rawatan khas.

A special treatment will be given to women who have diastolic blood pressure more than 144.1 mmHg. Find the probability of the women manage to get the special treatment.

- (iii) Seterusnya, jika terdapat 3500 wanita di daerah ini, cari jumlah kos rawatan sekiranya rawatan tersebut bernilai RM150 seorang.

Hence, if there are 3500 women in the district, find the total cost of the treatment if the treatment is worth RM150 per person.

[6 markah]
[6 marks]

Jawapan/Answer:

Q17: MRSM

- (a) Didapati bahawa kebarangkalian seorang pesakit mengalami kesan sampingan apabila mengambil ubat-ubatan baharu ialah p .

It is found that the probability that a patient will experience side effect while taking new medications is p .

- (i) Diberi bilangan pesakit yang mengalami kesan sampingan apabila mengambil ubat-ubatan mempunyai min 20 dan varians 16, cari nilai p .

Given the number of patients who experience side effect while taking the new medication has a mean of 20 and a variance of 16, find the value of p .

- (ii) Jika 10 pesakit dipilih secara rawak, cari kebarangkalian bahawa 3 pesakit mengalami kesan sampingan.

If 10 patients are selected at random, find the probability that 3 patients will experience the side effect.

- (b) Tekanan darah diastolik untuk seorang wanita di sebuah daerah tertentu adalah mengikut taburan normal dengan min μ mmHg dan sisihan piawai 50 mmHg. Jika seorang wanita dipilih secara rawak, didapati kebarangkalian tekanan darah diastolik kurang daripada 72 mmHg ialah 0.4364. markah]
[marks]

The diastolic blood pressure for a woman in a certain district follows a normal distribution with a mean μ mmHg and a standard deviation of 50 mmHg. If a woman is randomly selected, it is found that the probability that diastolic blood pressure less than 72 mmHg is 0.4364.

- (i) Cari nilai μ .

Find the value of μ .

- (ii) Rawatan khas akan diberikan kepada wanita yang mempunyai tekanan darah diastolik melebihi 144.1 mmHg. Cari kebarangkalian wanita yang layak mendapat rawatan khas.

A special treatment will be given to women who have diastolic blood pressure more than 144.1 mmHg. Find the probability of the women manage to get the special treatment.

- (iii) Seterusnya, jika terdapat 3500 wanita di daerah ini, cari jumlah kos rawatan sekiranya rawatan tersebut bernilai RM150 seorang.

Hence, if there are 3500 women in the district, find the total cost of the treatment if the treatment is worth RM150 per person.

[6 markah]
[6 marks]

Jawapan/Answer:

**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

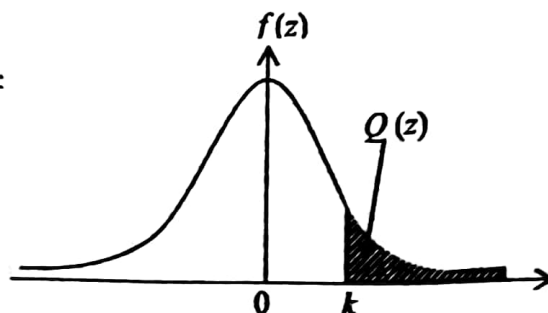
For negative z use relation:

Bagi z negatif guna hubungan:

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

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

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



Example / Contoh:

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

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

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

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

$$0.0179$$

[Lihat halaman sebelah
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