

Ujian Akhir Sesi Akademik

Masa/Time: 2 jam/hours

Bahagian A/Section A

[20 markah/marks]

Jawab semua soalan.

Answer all questions.

Skor

100

- 1 Sebutan ke- n bagi jujukan nombor 5, 7, 9, 11, ... dengan keadaan $n = 0, 1, 2, 3, \dots$ ialah
The n^{th} term of the number sequence 5, 7, 9, 11, ... where $n = 0, 1, 2, 3, \dots$ is

A $n + 5$ C $5n$
B $2n + 5$ D $5n + 2$

- 2 Faktorkan $16m + 4mn$.

Factorise $16m + 4mn$.

A $4m(4 + 1)$ C $4m(4 + n)$
B $4(4m + n)$ D $2m(8 + 4n)$

- 3 $(2x - 3y)^2 - (2xy + 9y^2) =$

A $2x(2x - 7y)$ C $2x(2x - 7y) + 18y^2$
B $2x(2x + 7y)$ D $2x(2x - 7y) - 18y^2$

- 4 Diberi $p = q(2 - s)^2$, cari nilai s jika $p = 9$ dan $q = 4$.
Given that $p = q(2 - s)^2$, find the value of s if $p = 9$ and $q = 4$.

A $-1\frac{1}{4}$ atau/or $3\frac{1}{4}$
B $-\frac{2}{3}$ atau/or $3\frac{1}{3}$
C $1\frac{1}{4}$ atau/or $3\frac{1}{4}$
D $\frac{1}{2}$ atau/or $3\frac{1}{2}$

- 5 Diberi $6p = \frac{2q}{p} - 1$, ungkapkan q dalam sebutan p .

Given that $6p = \frac{2q}{p} - 1$, express q in terms of p .

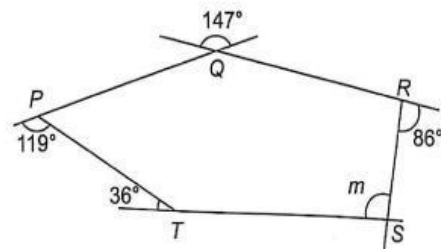
A $q = 3p^2 + p$
B $q = 6p^2 + p$
C $q = \frac{3p^2 + p}{2}$
D $q = \frac{6p^2 + p}{2}$

- 6 Sudut peluaran bagi sebuah poligon sekata ialah 30° . Cari bilangan sisi poligon itu.

The exterior angle of a regular polygon is 30° . Find the number of sides of the polygon.

A 8 C 10
B 9 D 12

- 7 Rajah di bawah menunjukkan sebuah pentagon PQRST. PQ, QR, RS, ST dan TP ialah garis lurus.
The diagram below shows a pentagon PQRST. PQ, QR, RS, ST and TP are straight lines.

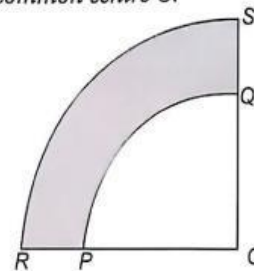


Cari nilai m .

Find the value of m .

A 87°
B 94°
C 108°
D 111°

- 8 Rajah di bawah menunjukkan dua sukuan bulatan, POQ dan ROS dengan pusat sepunya O.
The diagram below shows two quadrants, POQ and ROS with a common centre O.



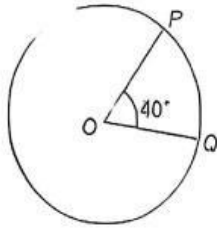
Diberi bahawa $OR = 8$ cm dan $RP : PO = 1 : 3$.
Hitung luas kawasan berlorek.

It is given that $OR = 8$ cm and $RP : PO = 1 : 3$.
Calculate the area of the shaded region.

A 7π cm²
B 14π cm²
C 26π cm²
D 32π cm²

- 9 Rajah 3 menunjukkan kawasan bagi acara melontar peluru yang ditanda oleh Cikgu Hamidi di padang sekolah.

Diagram 3 shows the throwing area for shot put that is marked by Teacher Hamidi on the school field.

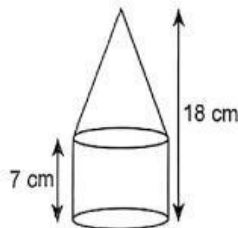


Bellau ingin menanda panjang lengkok major PQ dengan tali. Hitung panjang tali yang diperlukan jika luas sektor minor POQ ialah 0.503 m^2 .

He wants to mark the length of major arc PQ with a rope. Calculate the length of the rope needed if the area of minor sector POQ is 0.503 m^2 .

[Guna/Use $\pi = \frac{22}{7}$]

- A 6.7 m C 8.05 m
B 7.2 m D 8.71 m
- 10 Rajah 4 menunjukkan sebuah pepejal gabungan kon dan silinder.
Diagram 4 shows a composite solid consisting a cone and a cylinder.

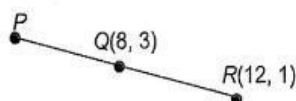


Diberi jejari kon ialah 3 cm, hitung isi padu pepejal gabungan itu.

Given that the radius of the cone is 3 cm, calculate the volume of the composite solid.

[Guna/Use $\pi = \frac{22}{7}$]

- A $259\frac{3}{7} \text{ cm}^3$ C $301\frac{5}{7} \text{ cm}^3$
B $282\frac{6}{7} \text{ cm}^3$ D $328\frac{5}{7} \text{ cm}^3$
- 11 Dalam Rajah 5, PQR ialah garis lurus dan Q ialah titik tengah bagi PR.
In Diagram 5, PQR is a straight line and Q is the midpoint of PR.



Cari koordinat P.

Find the coordinates of P.

- A (4, 4)
B (4, 5)
C (6, 3)
D (6, 4)

- 12 Diberi $P(-4, m)$ dan $Q(n, 10)$ memuaskan fungsi $y = \frac{10}{x} + 2$, cari nilai $m + n$.
Given that $P(-4, m)$ and $Q(n, 10)$ satisfy the function $y = \frac{10}{x} + 2$, find the value of $m + n$.

- A $\frac{1}{4}$ C $\frac{3}{4}$
B $\frac{1}{2}$ D $1\frac{1}{2}$

- 13 Sebuah kereta bergerak sejauh 2 500 m dalam masa 20 minit. Hitung laju, dalam km/j, kereta itu.
A car travels 2 500 m in 20 minutes. Calculate the speed, in km/h, of the car.
- A 7.5
B 9.0
C 10.5
D 12.5

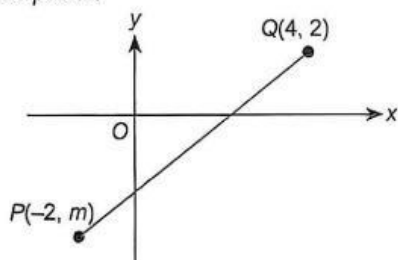
- 14 Syarif memandu dengan laju 102 km/j selama 2.5 jam dari rumahnya ke bandar P. Dia mengambil masa kurang 15 minit untuk perjalanan balik. Hitung laju, dalam km/j, bagi perjalanan balik.
Syarif drives at a speed of 102 km/h for 2.5 hours from his house to town P. He takes 15 minutes less on the way back. Calculate the speed, in km/h, for the return trip.

- A $98\frac{22}{31}$
B $108\frac{24}{47}$
C $111\frac{1}{4}$
D $113\frac{1}{3}$

- 15 Kecerunan bagi satu garis lurus yang menyambungkan titik E dan $F(0, -8)$ ialah -4 . Cari pintasan-x bagi garis lurus itu.
The gradient of a straight line that connects points E and $F(0, -8)$ is -4 . Find the x-intercept of the straight line.

- A -2
B -1
C 2
D 4

- 16 Rajah di bawah menunjukkan garis lurus PQ pada satu satah Cartes.
The diagram below shows a straight line PQ on a Cartesian plane.



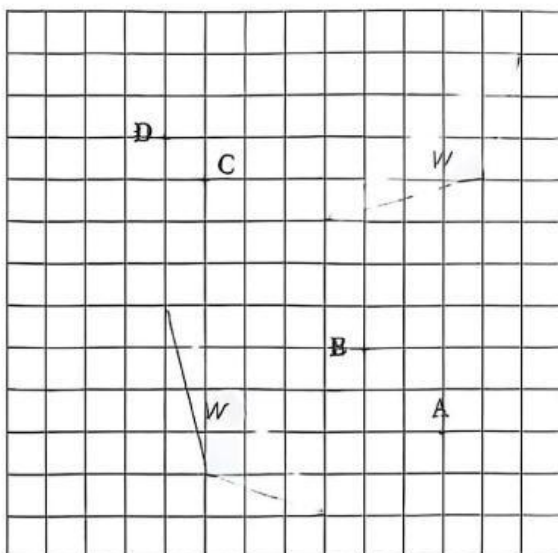
Diberi kecerunan garis lurus itu ialah $\frac{4}{3}$, cari nilai m .

Given that the gradient of the straight line is $\frac{4}{3}$, find the value of m .

- A -8
B -6
C -4
D -2
- 17 $Q'(3, -5)$ ialah imej bagi $Q(-1, -2)$ di bawah translasi
 $Q'(3, -5)$ is the image of $Q(-1, -2)$ under the translation

- A $\begin{pmatrix} 4 \\ -3 \end{pmatrix}$
B $\begin{pmatrix} -4 \\ -3 \end{pmatrix}$
C $\begin{pmatrix} -4 \\ 3 \end{pmatrix}$
D $\begin{pmatrix} 4 \\ 3 \end{pmatrix}$

- 18 Dalam rajah di bawah, W' ialah imej bagi W di bawah putaran 90° lawan arah jam pada suatu pusat putaran.
In the diagram below, W' is the image of W under a rotation of 90° anticlockwise at a centre of the rotation.



Antara titik A, B, C dan D, yang manakah ialah pusat putaran tersebut?
Which of the points, A, B, C or D, is the centre of the rotation?

- 19 Plot batang-dan-daun dalam rajah di bawah menunjukkan jisim pesakit yang dirawat di wad Melati.

The stem-and-leaf plot in the diagram below shows the mass of patients treated at Melati ward.

Batang/Stem	Daun/Leaf
4	2 7 9
5	3 5 5 7 8
6	0 1 2 2
7	3 4 4

Kekunci: 4|2 bermaksud 42 kg

Key: 4|2 means 42 kg

Tentukan min bagi data tersebut.

Determine the mean of the data.

- A 56.9 kg
B 58.8 kg
C 60.4 kg
D 63 kg
- 20 Jadual di bawah menunjukkan keputusan pertandingan memanah oleh dua orang atlet.
The table below shows the results of an archery competition between two athletes.

Atlet Athlete	Bilangan panahan yang mengenai sasaran Number of shots that hit the target		
	Pusingan 1 Round 1	Pusingan 2 Round 2	Pusingan 3 Round 3
Ravinder	15	18	17
Zainal	14	13	19

Setiap peserta diberi peluang untuk memanah sebanyak 20 kali pada setiap pusingan. Hitung kebarangkalian panahan Ravinder yang tidak mengenai sasaran.

Each participant is given the chance to shoot 20 times in each round. Calculate the probability that Ravinder's shots does not hit the target.

- A $\frac{1}{6}$
B $\frac{1}{2}$
C $\frac{5}{6}$
D $\frac{3}{5}$