

SULIT



JABATAN PELAJARAN NEGERI TERENGGANU

**UJIAN PENGESANAN TOV  
SIJIL PELAJARAN MALAYSIA 2009  
MATHEMATICS**

**1449/1**

**Kertas 1  
Februari  
2009**

$1\frac{1}{4}$  jam

Satu jam lima belas minit

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**JANGAN BUKA KERTAS SOALAN INI SEHINGGA DIBERITAHU**

1. *Kertas soalan ini adalah dalam dwibahasa.*
2. *Soalan dalam bahasa Inggeris mendahului soalan yang sepadan dalam bahasa Melayu.*
3. *Calon dikehendaki membaca maklumat di halaman belakang kertas soalan ini.*

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Kertas soalan ini mengandungi 26 halaman bercetak .

- 1 0.05065 rounded off correct to three significant figures is  
0.05065 *dibundarkan kepada tiga angka bererti ialah*
- A 0.050
  - B 0.051
  - C 0.0506
  - D 0.0507
- 2  $6.03 \times 10^3$  expressed as a single number is  
 $6.03 \times 10^3$  *diungkapkan sebagai satu nombor tunggal ialah*
- A 60.3
  - B 603
  - C 6030
  - D 60300
- 3  $64\ 000 + 2.7 \times 10^5 =$
- A  $3.34 \times 10^4$
  - B  $9.1 \times 10^4$
  - C  $3.34 \times 10^5$
  - D  $9.1 \times 10^5$
- 4  $110011_2 + 10111_2 =$
- A  $111000_2$
  - B  $111110_2$
  - C  $111010_2$
  - D  $111100_2$

- 5 Express  $241_5$  as a number in base two.

*Ungkapkan  $241_5$  sebagai nombor dalam asas dua.*

- A  $1000111_2$   
 B  $1000101_2$   
 C  $1001101_2$   
 D  $1001111_2$

- 6 In Diagram 1,  $JKLM$  is a rhombus and  $LMN$  is a straight line.

*Dalam Rajah 1,  $JKLM$  ialah sebuah rombus dan  $LMN$  ialah garis lurus.*

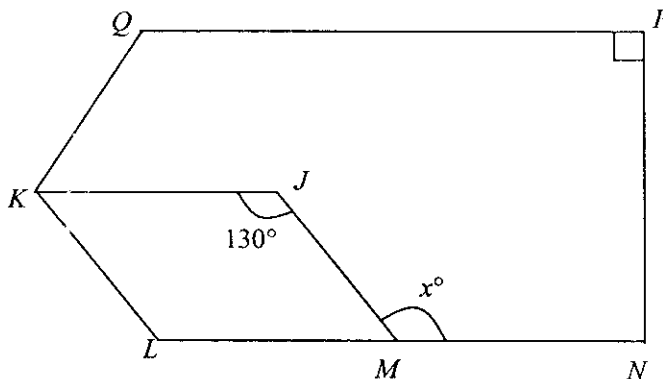


Diagram 1 [Rajah 1]

Find the value of  $x$

*Carikan nilai  $x$ .*

- A 50  
 B 65  
 C 100  
 D 130

- 7 In Diagram 2,  $EFGHJK$  is a regular hexagon. Given that  $LJH$  and  $FKL$  are straight lines.

*Dalam Rajah 2,  $EFGHJK$  ialah sebuah heksagon sekata. Diberi  $LJH$  dan  $FKL$  ialah garis lurus.*

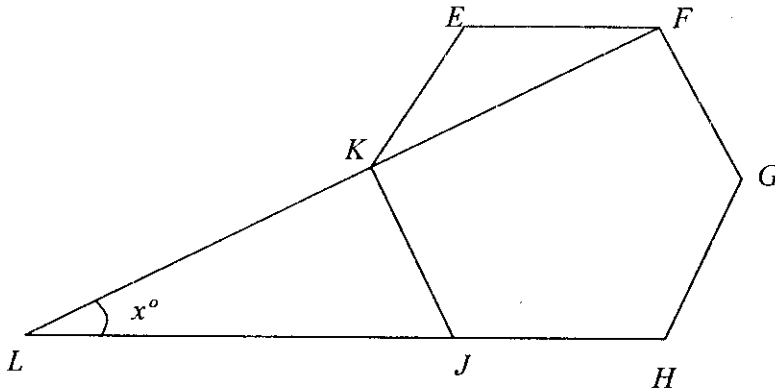


Diagram 2 [Rajah 2]

Value  $x =$

Nilai  $x =$

- A 30
- B 45
- C 50
- D 60

- 8 In Diagram 3,  $STU$  is a tangent to the circle  $PQRT$  at  $T$ .  
 Dalam Rajah 3,  $STU$  ialah tangen kepada bulatan  $PQRT$  di  $T$ .

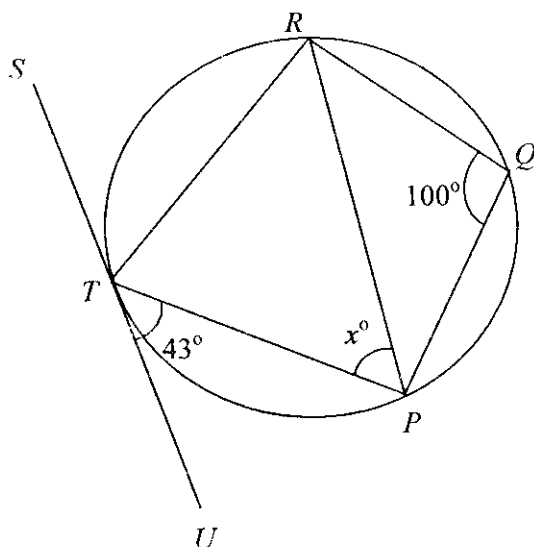


Diagram 3 [Rajah 3]

Value of  $x$  is  
 Nilai  $x$  ialah

- A 43
- B 47
- C 50
- D 57

9

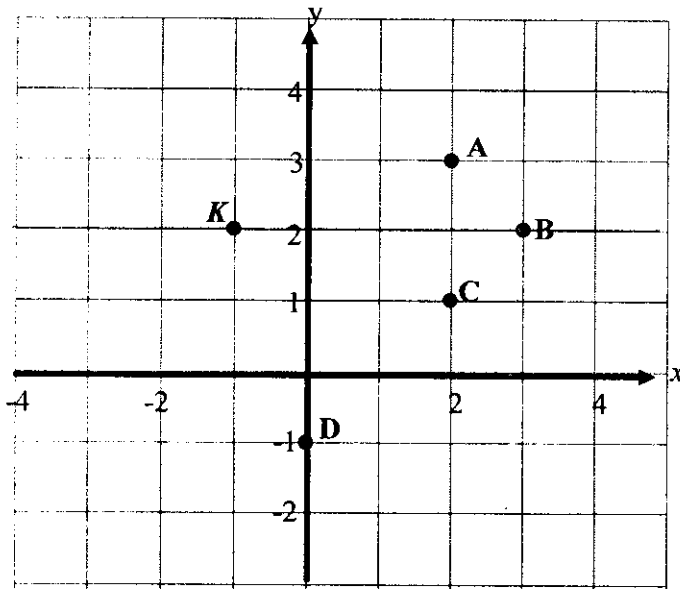


Diagram 4 [Rajah 4]

Diagram 4 shows points plotted on a Cartesian plane.

Which of the points, **A**, **B**, **C** and **D** is the image of point **K** under anticlockwise rotation of  $90^\circ$  about the centre  $(1,1)$ ?

*Rajah 4 menunjukkan beberapa titik pada suatu satah Cartesian.*

*Antara titik-titik **A**, **B**, **C**, dan **D** yang manakah imej bagi titik **K** di bawah putaran  $90^\circ$  mengikut arah lawan jam pada pusat  $(1,1)$ ?*

10 In Diagram 5,  $M'$  is the image of  $M$  under a certain translation.

$N'$  is the image of  $N$  under the same translation.

Dalam Rajah 5,  $M'$  ialah imej bagi  $M$  di bawah satu translasi tertentu.

$N'$  ialah imej  $N$  di bawah translasi yang sama.

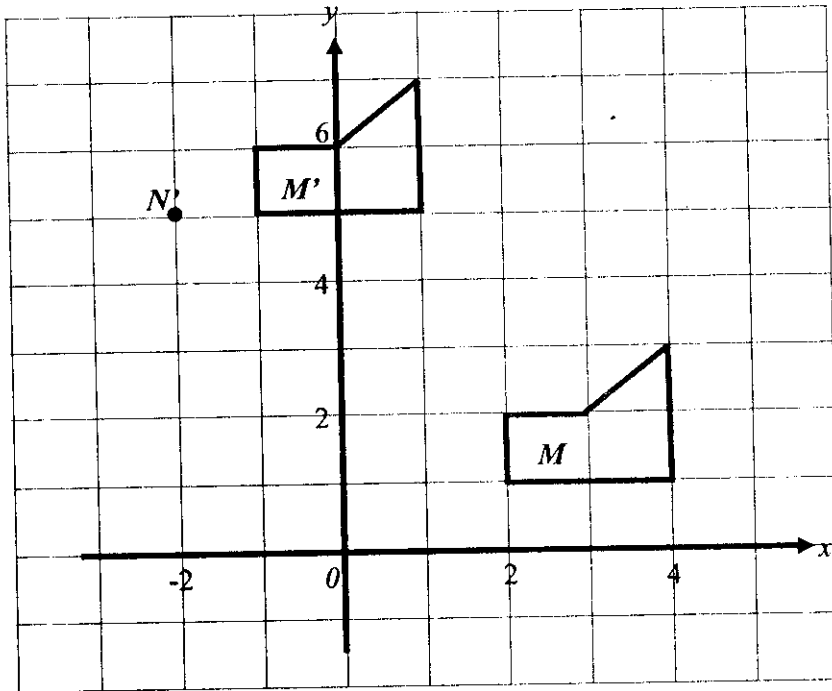


Diagram 5 [Rajah 5]

Find the coordinate of  $N$

Cari koordinat  $N$

- A (0, 1)
- B (1, 0)
- C (1, 1)
- D (2, 1)

- 11 In Diagram 6,  $PSR$  is a straight line. Given that  $\cos x^\circ = \frac{4}{5}$ .

Dalam Rajah 6,  $PSR$  adalah garis lurus. Diberi bahawa  $\cos x^\circ = \frac{4}{5}$ .

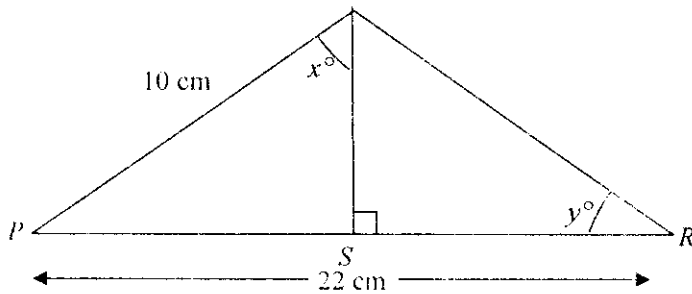


Diagram 6 [Rajah 6]

Find the value for  $\tan y^\circ$

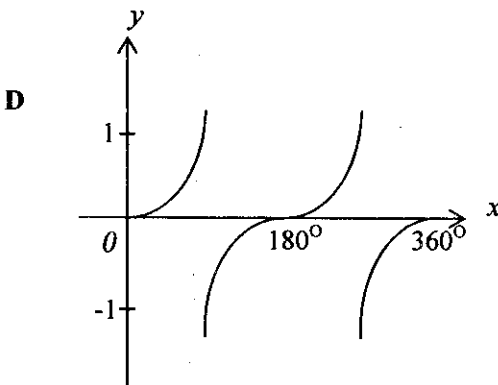
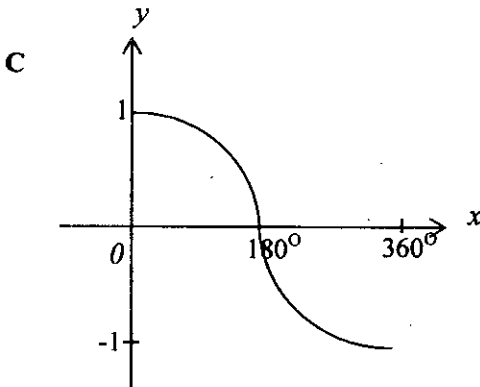
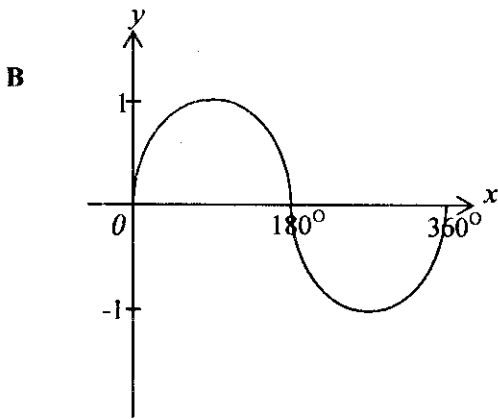
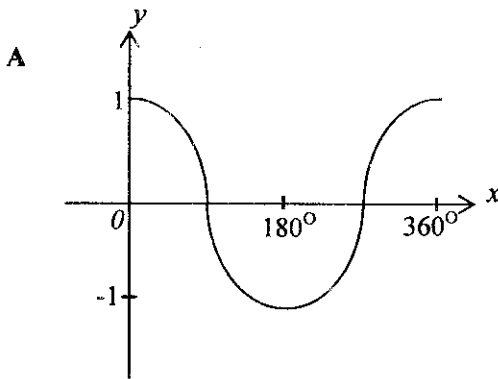
Carikan nilai bagi  $\tan y^\circ$

- A  $\frac{3}{8}$   
 B  $\frac{3}{7}$   
 C  $\frac{1}{2}$   
 D  $\frac{2}{3}$
- 12 Given that  $\tan x^\circ = -\tan 60^\circ$ , where  $0^\circ \leq x \leq 270^\circ$ , find the value of  $x$ .  
 Diberi bahawa  $\tan x^\circ = -\tan 60^\circ$ , di mana  $0^\circ \leq x \leq 270^\circ$ , cari nilai  $x$ .

- A 60  
 B 120  
 C 240  
 D 300



- 13 Which of the following graphs represents  $y = \sin x$ ?  
 Antara yang berikut, yang manakah mewakili graf bagi  $y = \sin x$ ?



- 14 Diagram 7 shows a pyramid with a horizontal rectangular base  $PQRS$ .  $VS$  is a vertical line.

Rajah 7 menunjukkan sebuah piramid dengan tapak mengufuk segiempat tepat  $PQRS$ .  $VS$  adalah garis tegak.

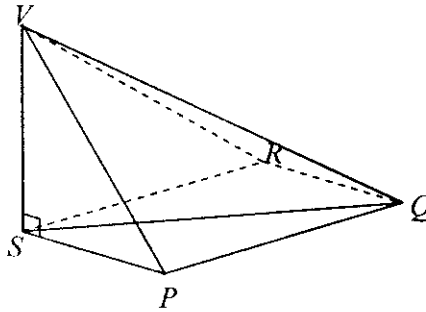


Diagram 7 [Rajah 7]

Name the angle between the line  $VQ$  and the base  $PQRS$ .

Namakan sudut antara garis  $VQ$  dan tapak  $PQRS$ .

- A  $\angle VQP$   
 B  $\angle VQR$   
 C  $\angle VQS$   
 D  $\angle PVQ$
- 15 Diagram 8,  $PQ$  and  $RS$  are two vertical walls on horizontal ground.

Dalam Rajah 8,  $PQ$  dan  $RS$  ialah dua dinding tegak yang terletak pada tanah mengufuk.

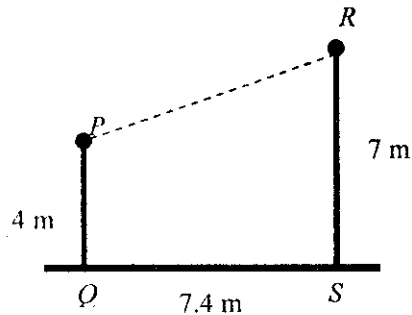


Diagram 8 [Rajah 8]

Find the angle of depression of  $P$  from  $R$ .

Hitungkan sudut tunduk  $P$  dari  $R$ .

- A  $22.07^\circ$   
 B  $67.98^\circ$   
 C  $69.44^\circ$   
 D  $89.16^\circ$

- 16 Diagram 9 shows two vertical poles,  $QRS$  and  $PU$ , are on the horizontal ground.  
*Rajah 9 menunjukkan dua tiang tegak  $QRS$  dan  $PU$ , terletak pada tanah mengufuk.*

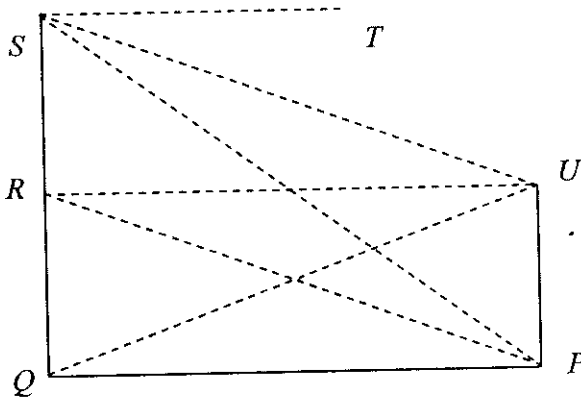


Diagram 9 [Rajah 9]

Which of the following statement is false?

*Antara yang berikut, yang manakah pernyataan palsu?*

- A** The angle of elevation of  $S$  from  $P$  is  $\angle QPS$ .  
*Sudut dongakan  $S$  dari  $P$  ialah  $\angle QPS$*
- B** The angle of elevation of  $U$  from  $Q$  is  $\angle UQP$ .  
*Sudut dongakan  $U$  dari  $Q$  ialah  $\angle UQP$*
- C** The angle of depression of  $U$  from  $S$  is  $\angle USR$ .  
*Sudut tunduk  $U$  dari  $S$  ialah  $\angle USR$*
- D** The angle of depression of  $P$  from  $R$  is  $\angle URP$ .  
*Sudut tunduk  $P$  dari  $R$  ialah  $\angle URP$*

- 17 In Diagram 10,  $O$  is the centre of a circle.  $JRK$  is the tangent to the circle at point  $R$ .  
 Dalam Rajah 10,  $O$  ialah pusat bulatan.  $JRK$  ialah tangen kepada bulatan pada titik  $R$ .

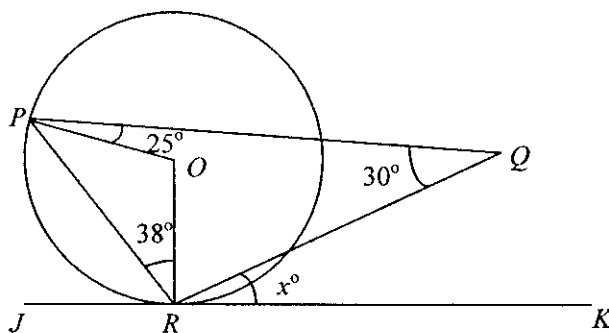


Diagram 10 [Rajah 10]

Find the value of  $x$ .

Carikan nilai  $x$ .

- A  $30^\circ$   
 B  $38^\circ$   
 C  $41^\circ$   
 D  $55^\circ$
- 18 Simplify  
 Permudahkan

$$(uv^{-4})^{\frac{1}{2}} \div \left(u^{\frac{1}{2}}v^{-1}\right)^3$$

- A  $u^{-1}v$   
 B  $uv$   
 C  $u^2v^{-1}$   
 D  $u^{\frac{1}{2}}v^{-1}$

19  $x(x-y) - (x-y)(2x+y) =$

- A  $3x^2 - y^2$   
 B  $-x^2 + y^2$   
 C  $x^2 - 4xy + y^2$   
 D  $-2x^2 + 4xy - y^2$

- 20 Given that  
 Diberi bahawa

$$1 - (r - s) = 2s + r,$$

express  $r$  in terms of  $s$ .  
 ungkapkan  $r$  dalam sebutan  $s$ .

- A  $2 + s$   
 B  $1 - 2s$   
 C  $\frac{s+1}{2}$   
 D  $\frac{1-s}{2}$

- 21 Express  $\frac{s}{2p} - \frac{2+s}{p}$  as a single fraction in its simplest form.

Ungkapkan  $\frac{s}{2p} - \frac{2+s}{p}$  sebagai satu pecahan tunggal dalam sebutan termudah.

- A  $\frac{3s-4}{2p}$   
 B  $\frac{-2}{p}$   
 C  $\frac{-(s+4)}{2p}$   
 D  $\frac{ps-2}{2p}$

- 22 Given that  $2p - 10 = 4(2p + 8)$ , find the value of  $p$

*Diberi  $2p - 10 = 4(2p + 8)$ , cari nilai  $p$*

A  $-7$

B  $7$

C  $\frac{11}{3}$

D  $-\frac{11}{3}$

- 23 Given that  $2^4 \div 2^a = 16$ , find the value of  $a$ .

*Diberi bahawa  $2^4 \div 2^a = 16$ , cari nilai  $a$ .*

A  $3$

B  $2$

C  $1$

D  $0$

- 24 Simplify  $\frac{(p^2q)^3}{p^{-2}}$ .

*Ringkaskan  $\frac{(p^2q)^3}{p^{-2}}$ .*

A  $p^8q^3$

B  $p^2q^3$

C  $p^6q^3$

D  $p^6q^5$

- 25 The solution for  $2x + 6 < 4 - \frac{x}{3}$  is

*Penyelesaian bagi  $2x + 6 < 4 - \frac{x}{3}$  ialah*

A  $x < -\frac{7}{3}$

B  $x < -\frac{6}{7}$

C  $x < -\frac{1}{3}$

D  $x < -\frac{2}{7}$

26 Diagram 11 is a bar chart which shows the scores of a group of pupils in a test

*Rajah 11 ialah carta palang yang menunjukkan skor bagi sekumpulan murid dalam suatu ujian.*

Number of Pupils  
*Bilangan Murid*

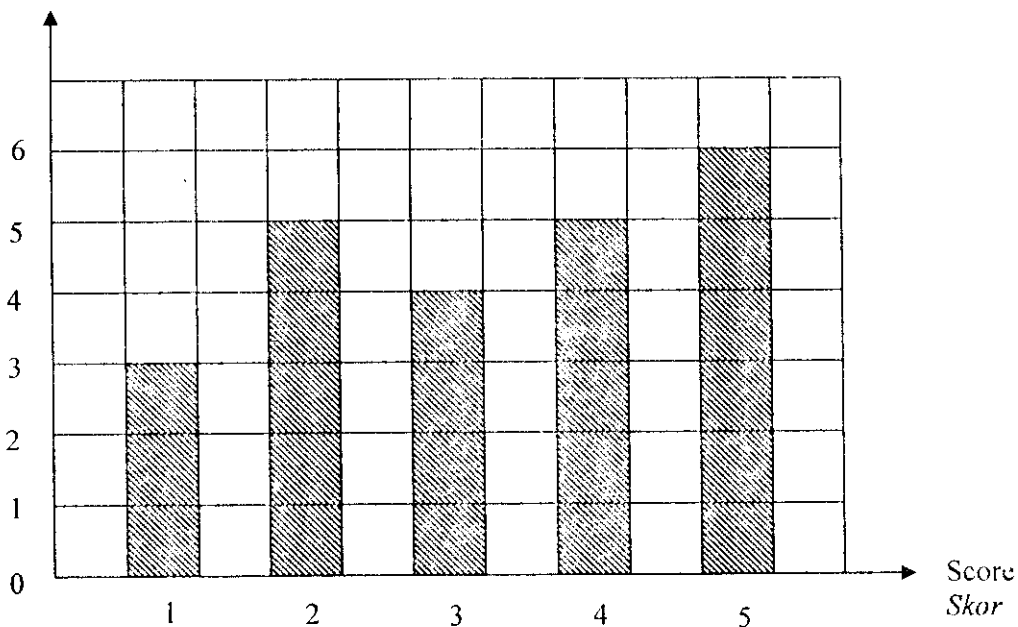


Diagram 11 [*Rajah 11*]

State the modal score.

*Nyatakan skor mod.*

- A** 6
- B** 5
- C** 4
- D** 3

- 27 Scores obtained by group of students in a game are as follows:

*Skor yang diperolehi oleh kumpulan dalam satu permainan adalah seperti berikut:*

4, 1, 5, 2, 3, 2, 4, 5

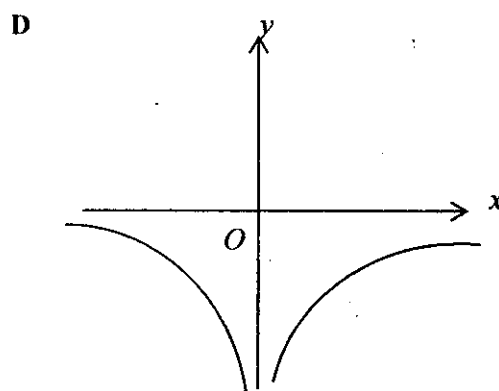
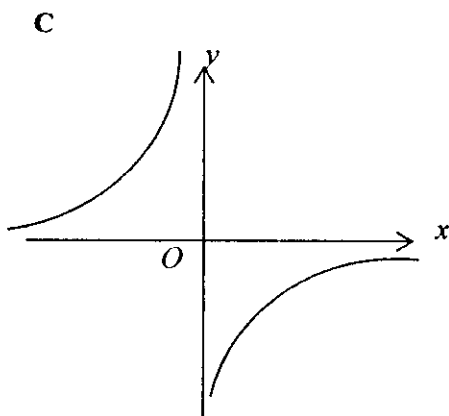
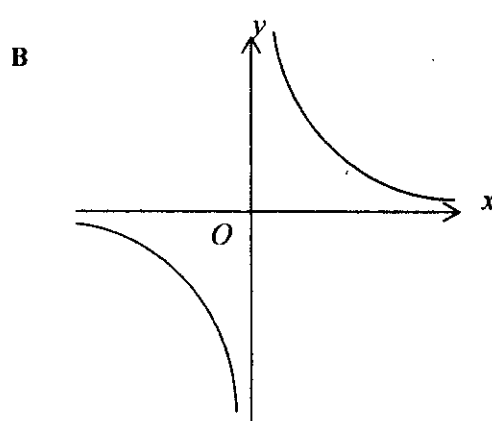
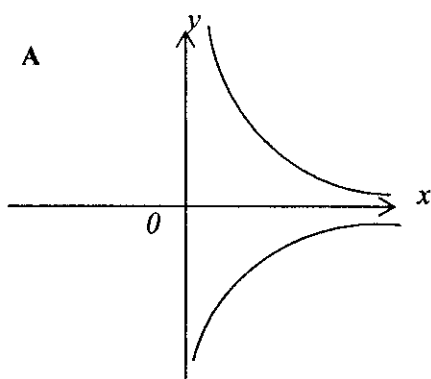
Find the score median of the distribution

*Cari skor median bagi taburan itu.*

- A 2.5  
 B 3  
 C 3.5  
 D 4

- 28 Which of the following graphs represents  $y = -\frac{5}{x}$  ?

*Antara yang berikut, yang manakah mewakili graf bagi  $y = -\frac{5}{x}$  ?*





- 29 Given the universal set,  $\xi = A \cup B$ , set  $A = \{0, 1, 2, 3\}$  and set  $B = \{2, 3, 4, 5, 6\}$ , find the value of  $n(\xi)$ .

*Diberi set semesta,  $\xi = A \cup B$ , set  $A = \{0, 1, 2, 3\}$  dan set  $B = \{2, 3, 4, 5, 6\}$ , cari nilai bagi  $n(\xi)$ .*

- A 2  
B 5  
C 7  
D 8

- 30 Diagram 12 is a Venn diagram showing the number of elements in sets  $P$ ,  $Q$  and  $R$ .

*Rajah 12 ialah gambar rajah Venn yang menunjukkan bilangan unsur dalam set  $P$ ,  $Q$  dan set  $R$ .*

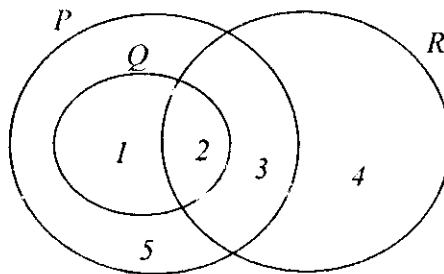


Diagram 13 [Rajah 13]

It is given that the universal set,  $\xi = P \cup Q \cup R$ .

Find  $n(P \cap (Q \cup R))$ .

*Diberi bahawa set semesta,  $\xi = P \cup Q \cup R$ .*

*Cari  $n(P \cap (Q \cup R))$ .*

- A 6  
B 10  
C 11  
D 15

- 31 Diagram 13 shows the number of elements in set  $P$ , set  $Q$  and set  $R$ . Given the universal set,  $\xi = P \cup Q \cup R$ .

Rajah 13 menunjukkan bilangan unsur dalam set  $P$ , set  $Q$  dan set  $R$ . Diberi set semesta,  $\xi = P \cup Q \cup R$ .

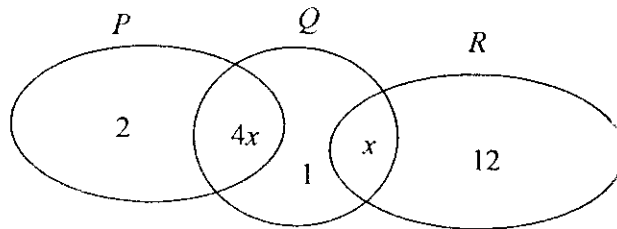


Diagram 13 [Rajah 13]

Given  $n[(P \cup Q) \cap R'] = n(R)$

Diberi  $n[(P \cup Q) \cap R'] = n(R)$

The value of  $x$  is

Nilai  $x$  ialah

- A 6
- B 5
- C 4
- D 3

- 32 In Diagram 14,  $AB$  is a straight line with gradient  $-\frac{1}{3}$ .

Dalam Rajah 14,  $AB$  ialah garis lurus dengan kecerunan  $-\frac{1}{3}$ .

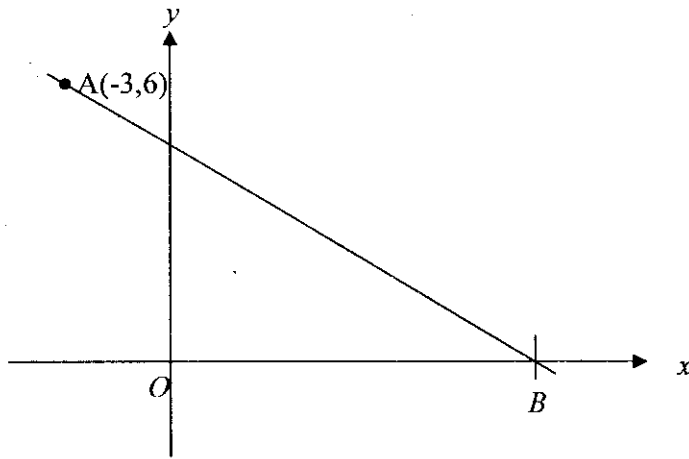


Diagram 14 [Rajah 14]

Find the coordinate of point  $B$ .

Carikan koordinat bagi titik  $B$

- A (5, 0)  
 B (10, 0)  
 C (15, 0)  
 D (20, 0)
- 33 Given that the straight line equation is  $3x - 5y = -15$ . Find the  $x$ -intercept of the straight line.  
 Diberi persamaan garis lurus  $3x - 5y = -15$ . Carikan pintasan- $x$  bagi garis lurus itu.
- A -5  
 B -3  
 C 3  
 D 5

- 34 A box contains 12 red marbles, 5 white marbles and a number of green marbles. The probability of choosing a red marble is  $\frac{3}{8}$ . How many green marbles are there in the box?

*Sebuah kotak mengandungi 12 biji guli merah, 5 biji guli putih dan beberapa biji guli hijau. Kebarangkalian bahawa sebiji guli merah dipilih ialah  $\frac{3}{8}$ . Berapakah bilangan guli hijau dalam kotak itu?*

- A 5  
 B 12  
 C 15  
 D 17
- 35 Table 1 shows the distribution of group of 85 pupils that go to the library.

*Jadual 1 menunjukkan taburan sekumpulan 85 orang murid yang pergi ke perpustakaan*

Pupils/Murid	Form/Tingkatan 4	Form/Tingkatan 5
Girls / perempuan	30	12
Boys / lelaki	18	25

Table 1 [Jadual 1]

A pupil is chosen at random from the group. What is the probability that a boy from Form 5 will be chosen?

*Seorang murid dipilih secara rawak daripada kumpulan itu. Apakah kebarangkalian seorang murid lelaki daripada tingkatan 5 akan dipilih?*

- A  $\frac{18}{85}$   
 B  $\frac{5}{17}$   
 C  $\frac{42}{85}$   
 D  $\frac{43}{85}$

- 36 Diagram 15 shows the graph of the function  $y = 2x^n + 5$ .  
*Rajah 15 menunjukkan graf fungsi  $y = 2x^n + 5$ .*

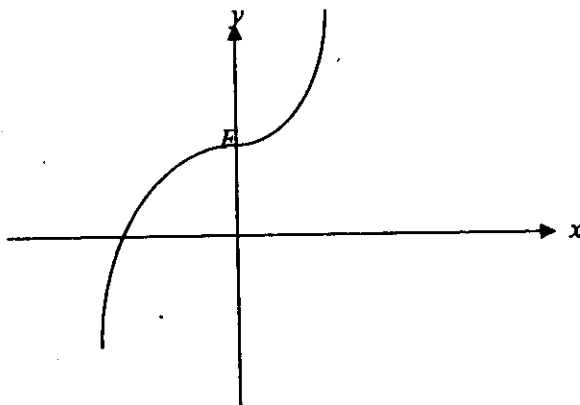


Diagram 15[Rajah 15]

Find the coordinate of  $F$  and the value of  $n$ .  
*Cari koordinat bagi  $F$  dan nilai bagi  $n$ .*

- A  $F(0, 2)$   $n = -3$   
 B  $F(0, 5)$   $n = -3$   
 C  $F(0, 2)$   $n = 3$   
 D  $F(0, 5)$   $n = 3$
- 37 Given that  $\frac{2x}{\sqrt{y}-1} = 3$ , then  $y =$

*Diberi bahawa  $\frac{2x}{\sqrt{y}-1} = 3$ , maka  $y =$*

- A  $36x^2 + 1$   
 B  $(6x - 1)^2$   
 C  $\left(\frac{2x}{3}\right)^2 - 1$   
 D  $\left(\frac{2x}{3} + 1\right)^2$

38  $110001_2 - 1011_2 =$

A  $100100_2$

B  $100110_2$

C  $111010_2$

D  $111100_2$

39 Given that  $x - (y + 3) = 4y$ , express  $y$  in terms of  $x$ .*Diberi  $x - (y + 3) = 4y$ , ungkapkan  $y$  dalam sebutan  $x$ .*

A  $y = \frac{x-3}{3}$

B  $y = \frac{x+3}{3}$

C  $y = \frac{x-3}{5}$

D  $y = \frac{x+3}{3}$

40 Given that  $\frac{1}{3}(n+2) = 2n+4$ . Calculate the value of  $n$ .*Diberi bahawa  $\frac{1}{3}(n+2) = 2n+4$ . Hitungkan nilai bagi  $n$ .*

A  $-3$

B  $-2$

C  $2$

D  $3$

**END OF QUESTION PAPER*****KERTAS SOALAN TAMAT***

**MARKING SCHEME**  
**UJIAN PENGESANAN TOV 2009**  
**TINGKATAN 5**

**MATHEMATICS PAPER 1**

1	A	11	C	21	C	31	D
2	C	12	B	22	A	32	C
3	C	13	B	23	D	33	A
4	B	14	C	24	A	34	C
5	A	15	A	25	B	35	B
6	D	16	C	26	B	36	D
7	A	17	C	27	D	37	D
8	D	18	A	28	C	38	B
9	D	19	C	29	C	39	C
10	C	20	D	30	A	40	B