# SMJK PEREMPUAN CHINA PULAU PINANG

**PEPERIKSAAN PERCUBAAN PMR 2011** **50/1**

**TINGKATAN 3**

**MATEMATIK**

**Kertas 1**

**September 2011**

$1\frac{1}{4}$ jam **Satu jam lima belas minit**

**JANGAN BUKA KERTAS SOALAN INI SEHINGGA DIBERITAHU**

1. *Kertas soalan ini adalah dalam bahasa Inggeris.*
2. *Kertas soalan ini mengandungi* **40** *soalan.*
3. *Jawab* **semua** *soalan.*
4. *Tiap-tiap soalan diikuti oleh empat pilihan, iaitu* ***A***, ***B***, ***C***, *dan* ***D****. Bagi setiap soalan, pilih satu jawapan sahaja. Hitamkan jawapan anda pada kertas jawapan objektif yang disediakan.*
5. *Jika anda hendak menukar jawapan, padamkan tanda yang telah dibuat. Kemudian hitamkan jawapan yang baru.*
6. *Rajah yang mengiringi soalan tidak dilukiskan mengikut skala kecuali dinyatakan.*
7. *Satu senarai rumus disediakan.*
8. *Anda dibenarkan menggunakan kalkulator saintifik yang tidak boleh diprogram.*

Kertas soalan ini mengandungi 12 halaman bercetak

1. 868 874 + 177 + $\boxed{\phantom{00}}$ = 891 438

What number must be written in the $\boxed{\phantom{00}}$ above?

A. 19 387 B. 20 387 C. 21 387 D. 22 387

2. Diagram 1 shows a number line.

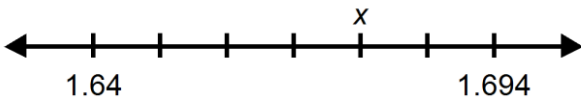



**Diagram 1**

What is the value of *x?*

A. 1.658 B. 1.667 C. 1.676 D. 1.685

3. Given $\frac{5}{21} < x < \frac{1}{3}$, the possible value of $x$ is

A. $\frac{1}{7}$ B. $\frac{2}{7}$ C. $\frac{3}{7}$ D. $\frac{4}{7}$

4. 20% of the total students in a school are in the morning session. The number of students in the morning session is 131. The number of students in the afternoon session is

A. 524 B. 531 C. 564 D. 574

5. Diagram 2 (a) and 2 (b) show all factors of 30 and 45.

***Factors of 30***

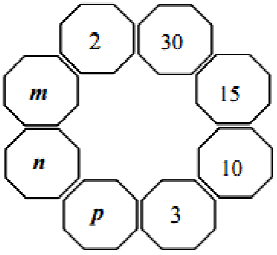



**Diagram 2 (a)**

***Factors of 45***

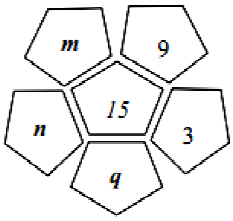



**Diagram 2 (b)**

Find the sum of *p* and *q.*

A. 6 B. 10 C. 39 D. 51

6. The figure 1 shows a note in Jing Wei's diary.

**Figure 1**

The flight to Pulau Langkawi takes 30 minutes. He starts his meeting within $\frac{5}{6}$ th of an hour after arriving at Pulau Langkawi. The new time for the meeting would be

A. 10 minutes earlier B. 20 minutes earlier
C. 35 minutes later D. 45 minutes later

7. Given that $s : t = 5 : 9$, state the ratio of $3s - t : t - s$.

A. 2 : 7 B. 3 : 2 C. 3 : 7 D. 12 : 7

8. In diagram 3, *PQRS* is a rectangle and *PTR* is a straight line.

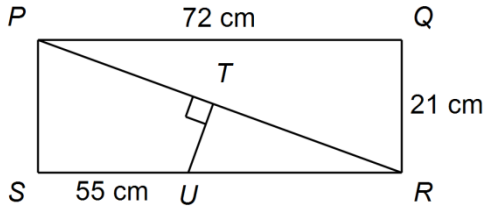



**Diagram 3**

Given that *TU* = 8 cm. Find the length, in cm, of *PT*.

A. 54 B. 56 C. 58 D. 60

9. In diagram 4, *PQ* // *ST.*

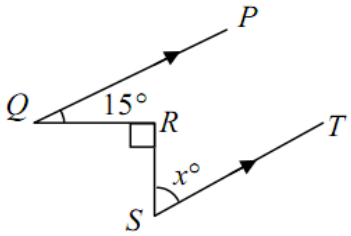



**Diagram 4**

Find the value of *x*

A. $15^{o}$ B. $35^{o}$ C. $75^{o}$ D. $85^{o}$

10. In diagram 5, *CDE* is a straight line.

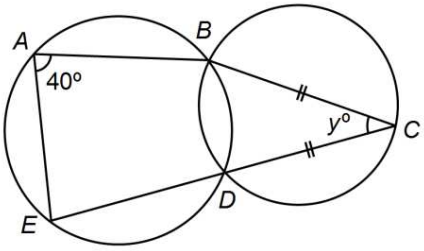



**Diagram 5**

Find the value of y.

A. 100 B. 110 C. 120 D. 130

11. Which of the following is **not** true?

A. $2+2+2+2=2^4$

B. $2^5 = 2\times2\times2\times2\times2$

C. $625 = 5^4$

D. $3^0 + 3^3 = 1+27$

12. Diagram 6 shows a prism.

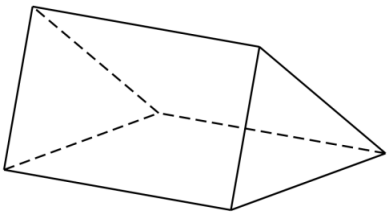
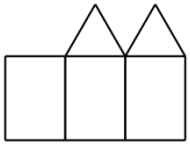


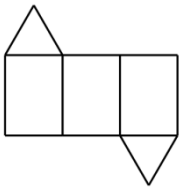
**Diagram 6**

Which of the following is a possible net for the prism?

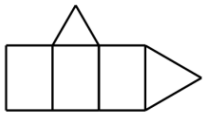
A.



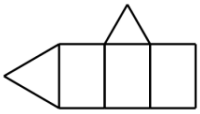
B.



C.



D.



13. In diagram 7, *LMNOPQ* is a hexagon. *POR*, *PQS* and *LMT* are straight lines.

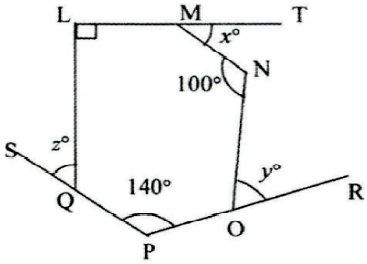



**Diagram 7**

Find the value of $x + y + z$.

A. 120 B. 150 C. 210 D. 240

14. Diagram 8 shows a rectangular cake.

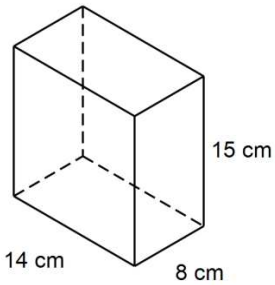



**Diagram 8**

If the cake is cut into 48 equal pieces, find the volume of each piece, in $cm^3$.

A. 35 B. 36 C. 37 D. 38

15. In diagram 9, *ABC* is a straight line.

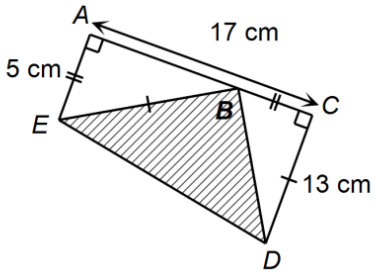



**Diagram 9**

Find the area of the shaded region, in $cm^2$.

A. 30.5 B. 60.5 C. 90.5 D. 120.5

16. Diagram 10 shows an isosceles triangle *ABC* drawn on a Cartesian plane. *ADB* is a straight line.

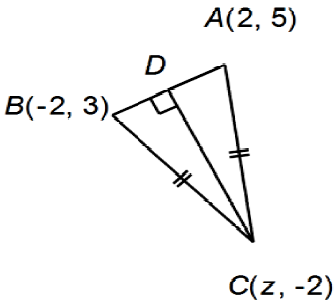



**Diagram 10**

What is the value of *z*?

A. 2 B. 3 C. 4 D. 5

17. Diagram 11 shows four arcs of circles with centres *E*, *F*, *G* and *I* respectively.

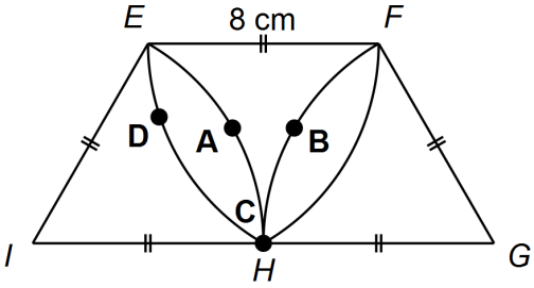



**Diagram 11**

Which of the point **A**, **B**, **C** or **D** is at a distance of 8 cm from *I* and more than 8 cm from *G*?

18.

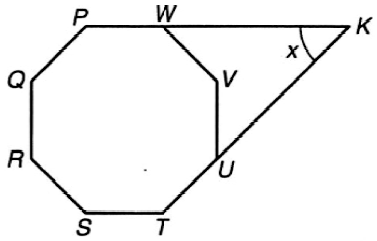



**Diagram 12**

Diagram 12 shows a regular octagon *PQRSTUVW*. *PWK* and *TUK* are straight lines. Find the value of *x.*

A. $38^{o}$ B. $40^{o}$ C. $42^{o}$ D. $45^{o}$

19.

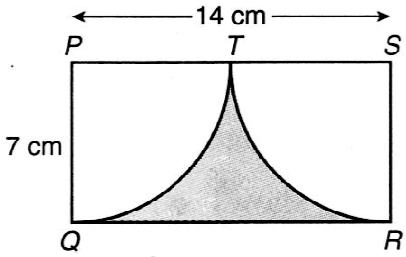



**Diagram 13**

In diagram 13, *PQRS* is a rectangle. *PQT* and *SRT* are two quadrants of circle with centres *P* and *S* respectively. Find the perimeter, in cm, of the shaded region.

[use $\pi = \frac{22}{7}$]

A. 30 B. 32 C. 36 D. 42

20. In Diagram 14, *ABC* is a straight line.

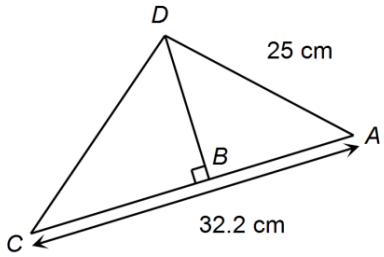



**Diagram 14**

Given that *BD* = 24. Find the length, in cm, of *CD*.

A. 30.8 B. 34.8 C. 38.8 D. 69.6

21. Diagram 15 is a line graph which shows the marks of the monthly Mathematics Test obtained by Jenny.

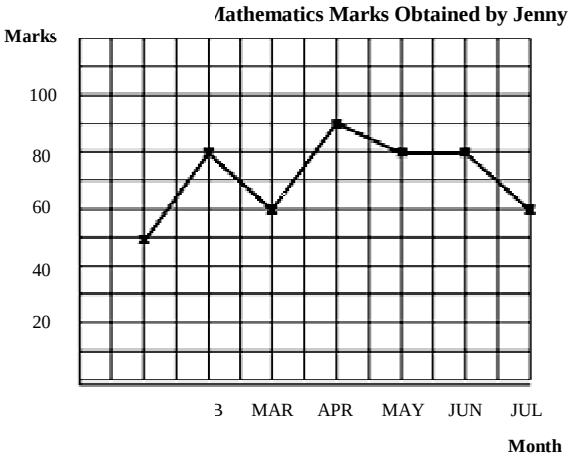



**Diagram 15**

What is the mode of the marks?

A. 50 B. 60 C. 80 D. 90

22. Given $x^3 = 9^{-\frac{3}{2}} \times 4^3$, then $x =$

A. $\frac{3}{4}$ B. $\frac{4}{3}$ C. $\frac{9}{4}$ D. $\frac{9}{8}$

23. A school has 60 teachers. $\frac{3}{4}$ of the teachers are Indians whereas the others are comprised of $s$ Chinese teachers and $t$ Malay teachers. The equation showing the relationship between $s$ and $t$ is

A. $s + t = 105$ B. $s + t = \frac{3}{4}$ C. $s + t = 15$ D. $s + t = 60$

24. Simplify $\frac{(3k^2)^2}{18k^2 + 10k}$

A. $\frac{9k^2}{2(9k + 5)}$ B. $\frac{9k^3}{9k + 5}$ C. $\frac{9k^3}{2(9k + 5)}$ D. $\frac{9k^3}{18k + 5}$

25. Given a formula $w = \frac{(x^2 + 1)y^3}{z}$. Find the value of $y$ if $w = 8$, $x = 2$ and $z = 5$.

A. - 2 B. 2 C. - 8 D. 8

26. In diagram 16, *STU, JKL* and *PTK* are straight lines.

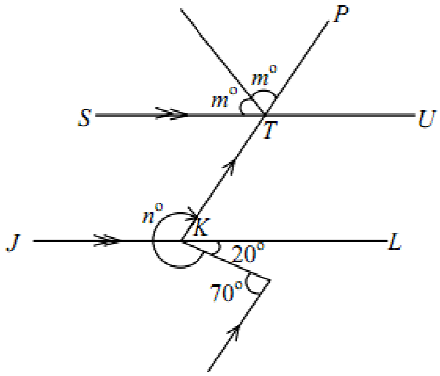



**Diagram 16**

Find the value of $m+n$.

A. 225 B. 355 C. 375 D. 420

27. David and Jeff paid a total capital of RM84 000 to set up a book shop. The ratio of David's capital to Jeff's capital is 5 : 9. If David increase his capital by RM18 000, find the ratio of David's capital to Jeff's capital.

A. 1 : 3 B. 5 : 6 C. 5 : 7 D. 8 : 9

28. In Diagram 17, *AB* is an arc of a circle with centre *O*. *OCD* is a right-angled triangle

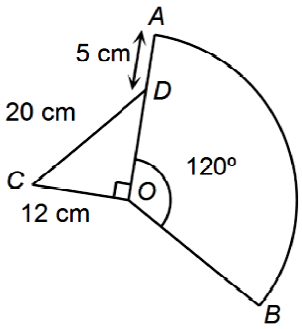



**Diagram 17**

Find the length, in cm, of the arc *AB*. (Use $\pi = \frac{22}{7}$)

A. 35 B. 41 C. 44 D. 67

29. Diagram 18 shows four pairs of figures drawn on square grids.

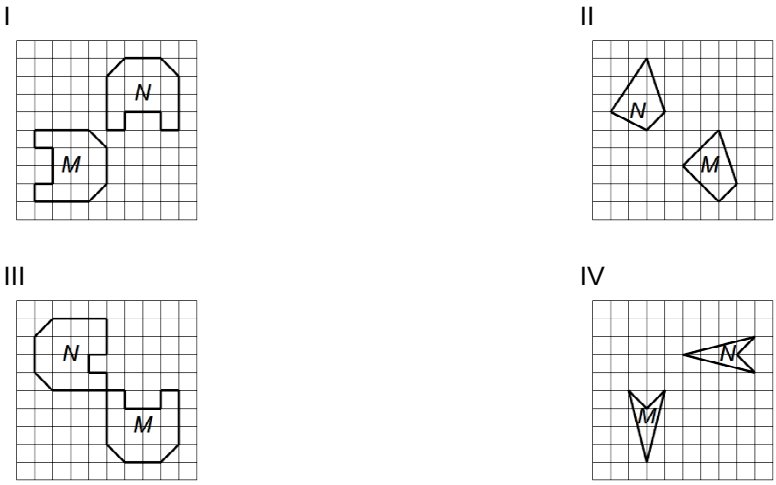



**Diagram 18**

Which pairs of figures are congruent?

A. I and II
B. II and III
C. III and IV
D. I and IV

30. In Diagram 19, the midpoint of *PR* is the same as the midpoint of *ST*.

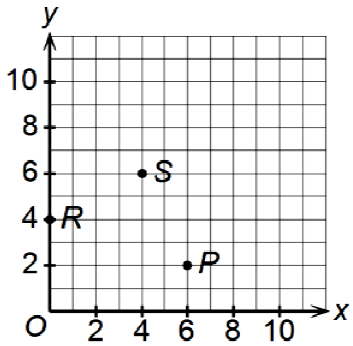



**Diagram 19**

What are the coordinates for point *T*?

A. (2, 6)
B. (4, 2)
C. (6, 4)
D. (2, 0)

31. In Diagram 20, triangle *WX'Y'* is the image of triangle *WXY* under a certain enlargement.

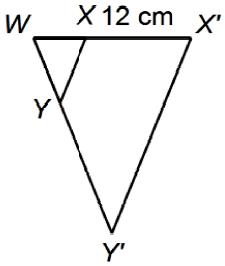



**Diagram 20**

If *WX* = 6 cm and *XY* = 8 cm, find the length, in cm, of *X'Y'*.

A. 12
B. 16
C. 24
D. 40

32. Diagram 21 shows a scale drawing of a house with dimensions of 30 m x 18 m.

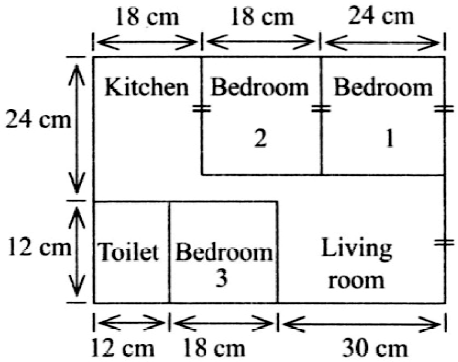



**Diagram 21**

Find the total actual area of the bedrooms, in $m^2$.

A. 108 B. 189 C. 233 D. 243

33. Diagram 22 represents two simultaneous linear inequalities in unknown $q$ on a number line.

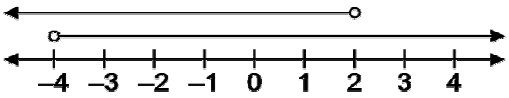



**Diagram 22**

Which inequality represents the common values of $q$ for both the inequalities?

A. $-4 < q \leq 2$ B. $-4 < q < 2$

C. $-4 \leq q < 2$ D. $-4 \leq q \leq 2$

34. In solving the following simultaneous equations:

$$5x + 3y = 4$$
$$3x + 2y = 4$$

Jenny tried to make the coefficients of the x-terms the same by writing:

$$15x + 9y = 12$$
$$15x + 10y = 4$$

Which of the following is written incorrectly by Jenny?

A. $9y$ B. $10y$ C. 12 D. 4

35. Table 1 shows the rate of payment for parking a car.

| Duration | Rate (RM) |
|---|---|
| First hour | 3.00 |
| Every additional $\frac{1}{2}$ hour | 1.20 |

**Table 1**

Eileen parks her car for $5\frac{1}{2}$ hours. What is the total amount she has to pay?

A. RM 8.40 B. RM 13.20

C. RM 13.80 D. RM 16.20

36. Diagram 23 is a pie chart showing the favourite food *W*, *X*, *Y* and *Z* of a group of 150 students.

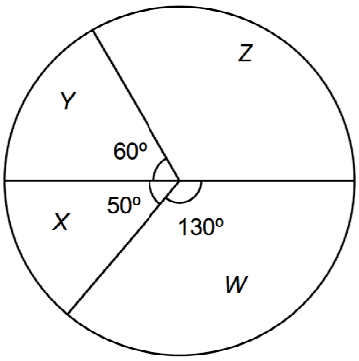



**Diagram 23**

The difference between the number of students whose favourite food is *Y* and *Z* is

A. 25 B. 50 C. 75 D. 100

37.

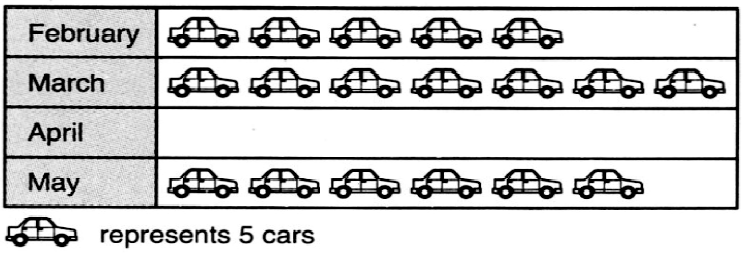



**Diagram 24**

Diagram 24 is a pictogram showing the sales of Proton Persona by car dealer. If the total number of cars sold for the four months is 110, how many must be drawn for the month of August?

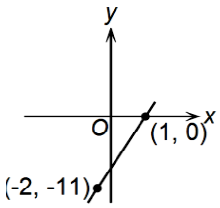
A. 4 B. 5 C. 8 D. 20

38. Given that the mean of the numbers *x*, 2, 6, 5, *y*, 6 and 6 is 6. The value of *x* + *y* is

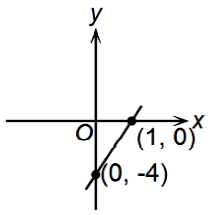
A. 22 B. 18 C. 17 D. 14

39. Which of the following is **not** the graph of $y = -4 + 4x$?

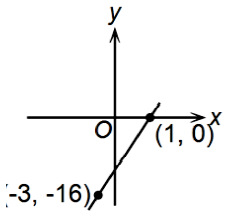
A.



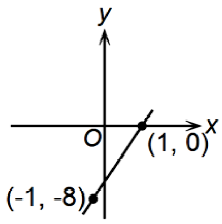

B.




C.




D.




40. In Diagram 25, *QTS* is a straight line.

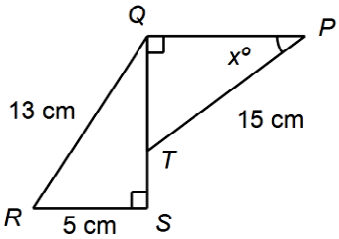



**Diagram 25**

Given that $\cos x° = \frac{4}{5}$, find the length of *ST*.

A. 1 B. 3 C. 5 D. 7

----------END----------

**Percubaan PMR 2011**

**Mataaematik kertas 1**

**Jawapan:**

| | |
|---|---|
| 1 | D |
| 2 | C |
| 3 | B |
| 4 | A |
| 5 | D |
| 6 | A |
| 7 | B |
| 8 | D |
| 9 | C |
| 10 | A |
| 11 | A |
| 12 | B |
| 13 | A |
| 14 | A |
| 15 | C |
| 16 | B |
| 17 | A |
| 18 | D |
| 19 | C |
| 20 | B |

| | |
|---|---|
| 21 | C |
| 22 | B |
| 23 | C |
| 24 | C |
| 25 | B |
| 26 | B |
| 27 | D |
| 28 | C |
| 29 | D |
| 30 | D |
| 31 | C |
| 32 | D |
| 33 | B |
| 34 | D |
| 35 | C |
| 36 | A |
| 37 | A |
| 38 | B |
| 39 | A |
| 40 | B |

***ANALISIS JAWAPAN:***

**A: 10 soalan**

**B: 11 soalan**

**C: 10 soalan**

**D: 9 soalan**