1) What is the smallest three digit number that can be formed using all of the digits 7, 9 and 4.

   (A) 479

   (B) 497

   (C) 749

   (D) 974

2) How many factors are there in 18?

   (A) 3

   (B) 4

   (C) 5

   (D) 6

3) Which of the following is a prime number?

   (A) 7

   (B) 9

   (C) 15

   (D) 21

4) Calculate $\sqrt{25} \times (2)^2$.

   (A) 10

   (B) 20

   (C) 50

   (D) 100

5) The cost price of a dress is $640.00. At a sale, a 20% discount is given. What is the selling price of the dress?

   (A) $ 128.00

   (B) $ 512.00

   (C) $ 660.00

   (D) $ 768.00

6) Aleem borrows $9000.00 from the bank at 6% per annum simple interest. The loan is to be repaid in 4 years. What will be the amount of each monthly installment Aleem will be required to pay?

   (A) $ 45.00

   (B) $ 180.00

   (C) $ 187.50

   (D) $ 232.50

7) Which expression is equal to $12\,x$?

   (A) $4\,x + 4\,x - 4\,x$

   (B) $24\,x \div 2$

   (C) $3\,x \times 4\,x$

   (D) $15\,x - 3$

8) If $4\,x + 3 = 15,$ then $x$ is equal to

   (A) 1

   (B) 3

   (C) 8

   (D) 12

9) Which expression is a factor of $ax - ay$?

(A) $a$

(B) $ax$

(C) $ay$

(D) $axy$

10) Given that $a = 2$ and $b = 3$, what is $(ab)^2$ ?

(A) 12

(B) 18

(C) 25

(D) 36

11) Factorize $m^2 - n^2$.

(A) $m(m - n)$

(B) $(m - n)^2$

(C) $(m - n)(m + n)$

(D) $m^2(1 - n^2)$

12) The length and width of a rectangular field are in the ratio **5 : 3**. If the width of the field is 45 m, what is its length?

(A) 27 m

(B) 53 m

(C) 60 m

(D) 75 m

13) The scores obtained in a spelling competition are 5, 8, 8, 6, 9, 4, 4, 7, 9, 9, 7 and 8. What is the mean score?

(A) 7

(B) 8

(C) 9

(D) 12

14) What is the middle value of a set of numbers, when arranged in order of magnitude?

(A) Mean

(B) Median

(C) Mode

(D) Range

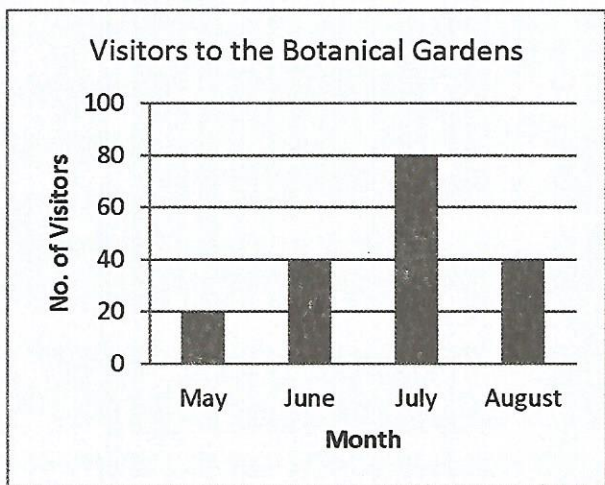15) The table shows the distribution of grades for 40 students in a Politics class. Passing grades are A, B and C.

| Grade | A | B | C | D | E |
|-------|---|---|----|---|---|
| Number of Students | 7 | 6 | 12 | 8 | 7 |

What percent of students **failed** the course?

(A) 15 %

(B) 25 %

(C) 37.5 %

(D) 62.5 %

16) The bar graph shows the number of people who visited the Botanical Gardens.



How many more people visited the Botanical Gardens in July than in May?

(A)    20

(B)    60

(C)    80

(D)    100

17) George has scores of 70, 75 and 80 on three Mathematics tests. What score must he obtain on the next test to have a mean score of exactly 80 for the four tests?

(A)    75

(B)    80

(C)    85

(D)    95

18) The pie chart shows how the 600 students of Valley View High School arrive at school.



How many students walk to school?

(A)    100

(B)    120

(C)    200

(D)    300

19) In a bag of marbles $\frac{1}{6}$ is red, $\frac{1}{2}$ is yellow, $\frac{1}{12}$ is green and $\frac{1}{4}$ is blue. If a marble is drawn from the bag at random, which colour is it **most likely** to be?

(A)    Blue

(B)    Green

(C)    Red

(D)    Yellow

20) Which of the following quadrilaterals possesses **two** axes of symmetry?

(A)    Kite

(B)    Parallelogram

(C)    Rhombus

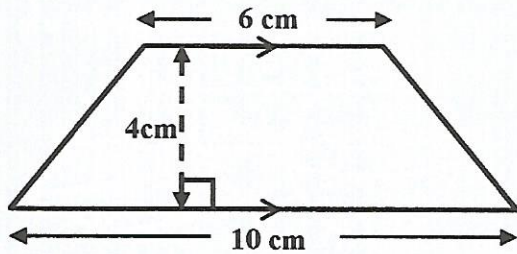(D)    Trapezium

21) The net of a square-based pyramid is shown.
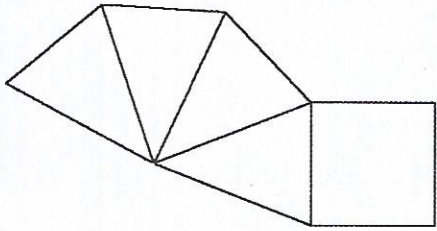
When the net above is folded, the solid formed will contain how many edges?

(A)     5

(B)     8

(C)     12

(D)     16

22) Which solid **does not** possess a curved surface?

(A)     Cone
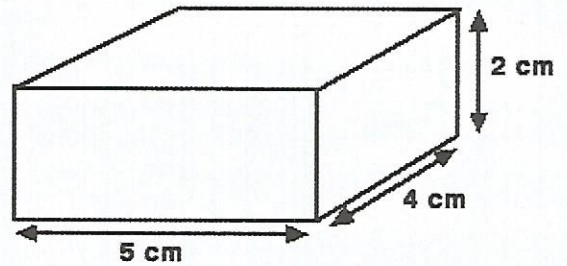
(B)     Cuboid

(C)     Cylinder

(D)     Sphere

23)

6 cm

4cm

10 cm

Calculate the area of the trapezium.

(A)     16 cm$^2$

(B)     20 cm$^2$

(C)     32 cm$^2$

(D)     64 cm$^2$

24)   The length of one side of a cube is 5 cm. Calculate the surface area of the cube.

(A)     25 cm$^2$

(B)     60 cm$^2$

(C)     125 cm$^2$

(D)     150 cm$^2$

25)

2 cm

4 cm

5 cm

What is the volume of the rectangular box whose length is 5 cm, width is 4 cm and height is 2 cm?

(A)     10 cm$^3$

(B)     11 cm$^3$

(C)     22 cm$^3$

(D)     40 cm$^3$

26)   The volume of a can is 1540 cm$^3$. If the radius is 7 cm, calculate the height. (Use volume of can $= \pi r^2 h$ where $\pi = \frac{22}{7}$).
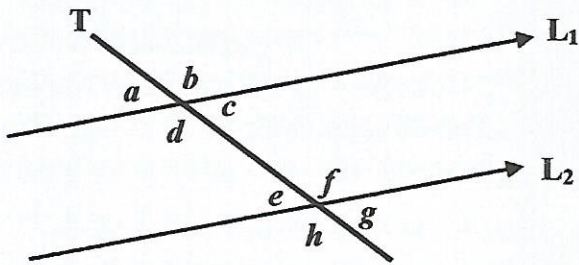
(A)     10 m

(B)     70 m

(C)     220 m

(D)     343 m

27) The diagram below shows a flower bed in the shape of a sector. $(\pi = \frac{22}{7})$
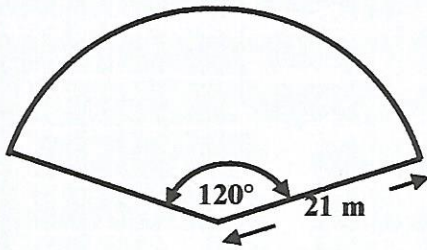


What is the **area** of the flower bed with radius 21 m and sector angle 120°?

(A)   88 m$^2$

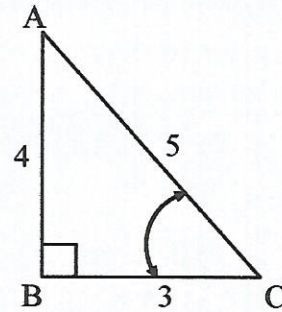(B)   132 m$^2$

(C)   174 m$^2$

(Ɒ)   462 m$^2$

28) The diagram below shows two parallel lines, $L_1$ and $L_2$, being intersected by the straight line **T**.



What type of angles are *e* and *g* called?

(A)   alternate

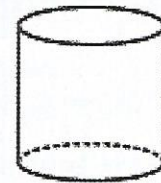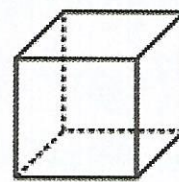(B)   co-interior

(C)   corresponding

(Ɒ)   vertically opposite

29)



In this triangle, tan C =
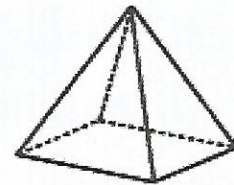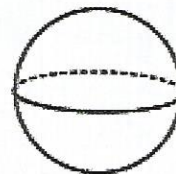
(A)   $\frac{3}{5}$

(B)   $\frac{3}{4}$

(Ҫ)   $\frac{4}{3}$

(D)   $\frac{4}{5}$

30)



Which of the solids are prisms?

(A)   I and II

(Ƀ)   I and IV

(C)   II and III

(D)   III and IV

31)

A

29 units

B 21 units C
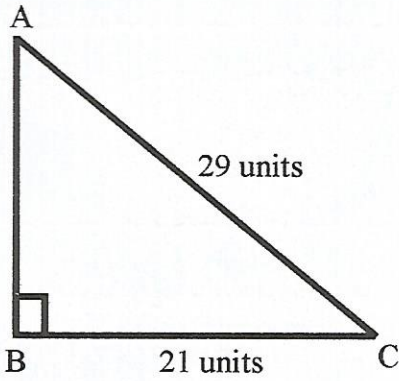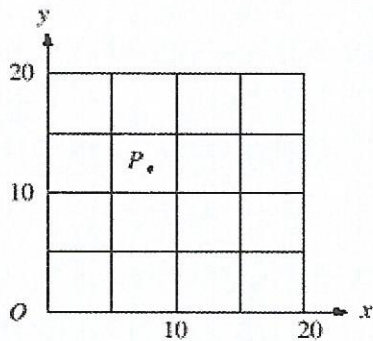
What is the height AB (in units) of the triangle ABC (not drawn to scale)?

(A) $\sqrt{29 - 21}$

(B) $\sqrt{29 + 21}$
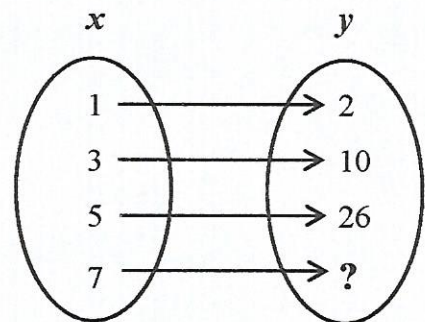
(C) $\sqrt{29^2 - 21^2}$

(D) $\sqrt{29^2 + 21^2}$

33) The diagram shows a straight line, *l*.
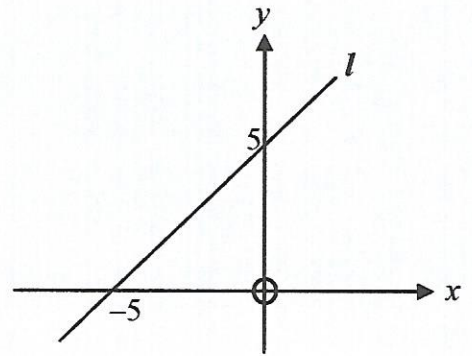
Which of the following points will lie below the line *l* ?

(A) $(-6, 6)$

(B) $(-6, 0)$

(C) $(0, 6)$

(D) $(6, -6)$

32) Which of the following are most likely to be the coordinates of point *P*?

(A) $(8, 8)$

(B) $(8, 12)$

(C) $(12, 8)$

(D) $(12, 12)$

34) The arrow diagram represents a relation between *x* and *y*. What is the missing number in the set *y*?

(A) 34

(B) 42

(C) 49

(D) 50

35) What is the range of the relation
$\{(-1,1),(0,0),(1,1)\}$?

(A)   $\{-1,0\}$

(B)   $\{-1,0,1\}$

(C)   $\{-1,1\}$

(D)   $\{0,1\}$

36) Which of the following is **not** equal to the set $\{1,2,3\}$?

(A)   $\{1\} \cup \{2\} \cup \{3\}$

(B)   $\{1,2\} \cup \{2,3\}$

(C)   $\{1,2,3\} \cup \{1,2,4\}$

(D)   $\{1,2,3\} \cap \{1,2,3,4\}$

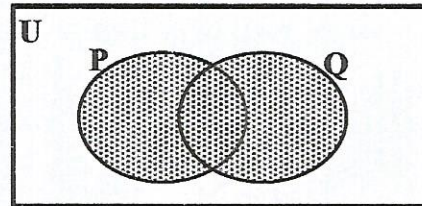37) Given that $A = \{$ odd numbers from 1 to 10 $\}$ and $B = \{$ prime numbers from 1 to 10 $\}$, what is $A \cup B$?

(A)   $\{1, 2, 3, 5, 7, 9\}$

(B)   $\{1, 2, 3, 5, 7\}$

(C)   $\{2, 3, 5, 7, 9\}$

(D)   $\{2, 3, 5, 7\}$

38) If $X = \{b, d, f\}$ and $Y = \{a, b, f, d, c\}$ then which of the following statements is **true**?

(A)   $X = Y$

(B)   $X \subset Y$

(C)   $Y \subset X$

(D)   $X \cap Y = \emptyset$
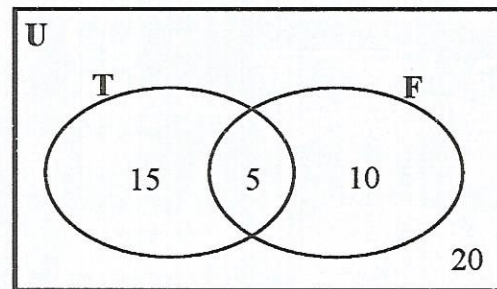
39)



In this diagram, what does the **unshaded** region represent?

(A)   $P \cup Q$

(B)   $(P \cup Q)'$

(C)   $P \cap Q$

(D)   $(P \cap Q)'$

40)



In the Venn diagram, U represents students in a class. T is the set of students who play tennis and F is the set of students who play football.

How many students play tennis only?

(A)   5

(B)   10

(C)   15

(D)   20

**END OF TEST**