

Mathematics**MCQ Single Correct (1 Marks)****20 × 1 = 20**

- 1) Both x and y vary inversely with each other. When x is 10, y is 6, which of the following is not a possible pair of corresponding values of x and y? **1**
- A) 12 and 5
B) 15 and 4
C) 25 and 2.4
D) 45 and 1.3
- 2) Volume of cuboid having length 5.1 m, breadth 2 m and height 2 m. **1**
- A) 19.4 m²
B) 20.4 m²
C) 21.2 m²
D) 24.4 m²
- 3) Assuming land to be uniformly fertile, the area of land and the yield on it vary **1**
- A) directly with each other.
B) inversely with each other
C) neither directly nor inversely with each other
D) sometimes directly and sometimes inversely with each other.
- 4) Solve for $\frac{3x}{2} = 12$ **1**
- A) 6
B) 7
C) 8
D) 9
- 5) In 10² the base is **1**
- A) 1
B) 0
C) 10
D) 100
- 6) The original price of a washing machine which was bought for Rs 13,500 inclusive of 8% VAT is **1**
- A) Rs 12,420
B) Rs 14,580
C) Rs 12,500
D) Rs 13,492

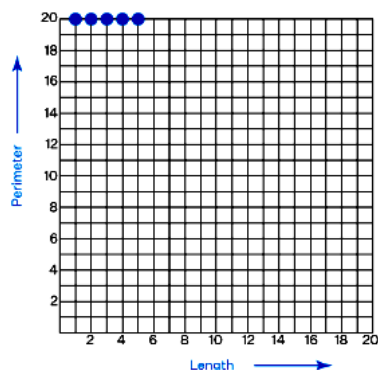
- 7) '0' is not _____ 1
- A) a natural number
 - B) a whole number
 - C) an integer
 - D) a rational number
- 8) A jacket was sold for Rs 1,120 after allowing a discount of 20%. The marked price of the jacket is 1
- A) Rs 1440
 - B) Rs 1400
 - C) Rs 960
 - D) Rs 866.66
- 9) If 3 quintals of coal cost Rs 6000, What is the cost of 120 kg? 1
- A) Rs 1200
 - B) Rs 2400
 - C) Rs 3600
 - D) Rs 4800
- 10) What is the area of the largest triangle that can be fitted into a rectangle of length l units and width w units? 1
- A) $lw/2$
 - B) $lw/3$
 - C) $lw/6$
 - D) $lw/4$
- 11) Which of the following numbers is not a perfect square? 1
- A) 169
 - B) 196
 - C) 225
 - D) 256

12) Which graph of the following represents the table below?

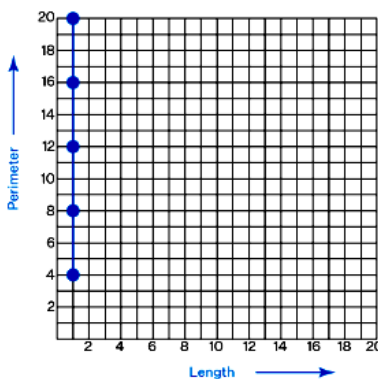
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Length of side	1	2	3	4	5
Perimeter	4	8	12	16	20

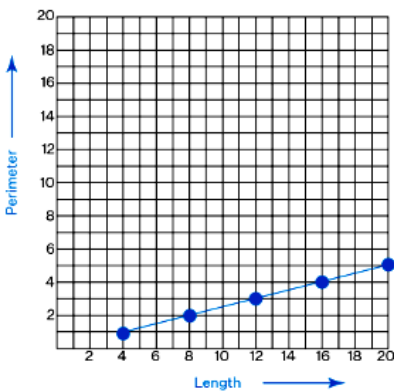
A)



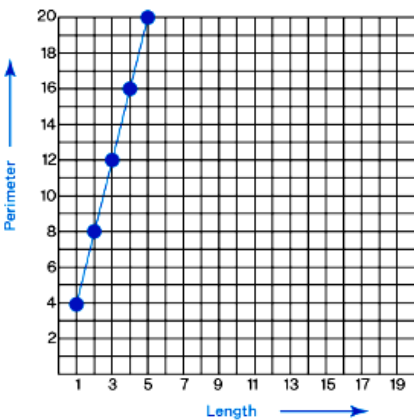
B)



C)



D)



- 13) The rational number that does not have a reciprocal is 1
- A) 0
B) 1
C) -1
D) 2
- 14) The coefficient of xy in xy is 1
- A) 1
B) -1
C) 2
D) 3
- 15) A truck needs 54 litres of diesel for covering a distance of 297 km. The diesel required by the truck to cover a distance of 550 km is 1
- A) 100 litres
B) 50 litres
C) 25.16 litres
D) 25 litres
- 16) Which of the following can be the square of a natural number 'n'? 1
- A) sum of the squares of first n natural numbers
B) sum of the first n natural numbers
C) sum of first $(n - 1)$ natural numbers
D) sum of first 'n' odd natural numbers
- 17) On factorising $14pq + 35pqr$, we get: 1
- A) $pq(14 + 35r)$
B) $p(14q + 35qr)$
C) $q(14p + 35pr)$
D) $7pq(2 + 5r)$
- 18) What is the square root of 324? 1
- A) 16
B) 17
C) 18
D) 19
- 19) Which of the following is the common factor of $21x^2y$ and $35xy^2$? 1
- A) 7
B) xy
C) $7xy$
D) none of these

- 20) If x and y vary inversely. Then using the following table, find x if y = 10. 1
 $x = 15, y = 90$
- A) 100
 B) 135
 C) 400
 D) 200

Short Answer (2 Marks)

6 × 2 = 12

- 21) Find x : $4x + 7 = 19$ 2

---OR---

Solve for x : $3x - 5 = 10$.

- 22) Multiply $\frac{-3}{4}$ and $\frac{5}{6}$ 2

- 23) Find the radius of a circle if its area is 154 cm^2 . 2

- 24) What is the square root of 625? 2

- 25) Simplify : 2

$$\frac{7}{3} - \frac{2}{3}$$

- 26) Find the y-intercept of the line represented by the equation $y = 3x - 5$. 2

---OR---

Plot the points A(2, 3) and B(6, 7) on a graph. Find the midpoint of the line segment joining A and B.

Short Answer (3 Marks)

8 × 3 = 24

- 27) In a parallelogram, the length of one diagonal is 10 cm and the other is 12 cm. Find the area if the height is 6 cm. 3

---OR---

A parallelogram has base 10 cm and height 6 cm. What is its area?

- 28) Find the distance between points A(1, 1) and B(4, 5). 3

- 29) Find a number whose square is 484. 3

---OR---

The area of a square is 289 cm^2 . Find the length of one side.

- 30) Simplify : 3

$$\frac{7^4}{7^2} \times 7^3$$

- 31) A sum of ₹5,000 increases by 8% per annum. What will the amount be after 2 years? 3

- 32) In a square, the length of one side is 7 cm. Find the length of its diagonal. 3

- 33) The cost price of a shirt is ₹1,200, and it is sold for ₹1,500. Find the profit percentage. 3
- 34) A discount of 15% is given on a marked price of ₹1,200. What is the selling price? 3

Long Answer (4 Marks)

6 × 4 = 24

- 35) Using prime factorisation, find which of the following are perfect cubes.
(a) 128 (b) 343 (c) 729 (d) 1331 4
- 36) A steamer goes downstream and covers the distance between two ports in 5 hours while it covers the same distance upstream in 6 hours. If the speed of the stream is 1 km/hr, find the speed of the steamer in still water. 4
- 37) The cost of a notebook is rs. 10. Draw a graph after making a table showing cost of 2, 3, 4, ... notebooks. Use it to find.
(a) the cost of 7 notebooks
(b) the number of notebooks that can be purchased with Rs. 50 4
- 38) Principle = Rs. 1000, Rate = 8% per annum. Fill in the following table and find which type of interest (simple or compound) changes in direct proportion with time period 4

Time Period	1 year	2 years	3 years
Simple Interest (in Rs.) $\frac{p \times r \times t}{100}$			
Compound Interest (in Rs.) $p \left(1 + \frac{r}{100}\right)^t - p$			

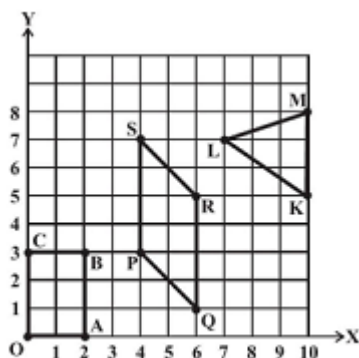
---OR---

A loaded truck travels 14 km in 25 minutes. If the speed remains the same, how far can it travel in 5 hours?

- 39) Find the coordinates of the midpoint of the line segment joining points P(1, 2) and Q(5, 6). 4

---OR---

Write the coordinates of the vertices of each of these adjoining figures.



- 40) Simplify :
 $(x + y)(x^2 - xy + y^2)$ 4