13. $-(-x)$ is same as

(a) $-x$ (b) x (c) $\frac{1}{x}$ (d) $\frac{-1}{x}$

14. The multiplicative inverse of $-1\frac{1}{7}$ is

(a) $\frac{8}{7}$ (b) $\frac{-8}{7}$ (c) $\frac{7}{8}$ (d) $\frac{7}{-8}$

15. If x be any rational number then $x + 0$ is equal to

(a) x (b) 0 (c) $-x$ (d) Not defined

16. The reciprocal of 1 is

(a) 1 (b) -1 (c) 0 (d) Not defined

17. The reciprocal of -1 is

(a) 1 (b) -1 (c) 0 (d) Not defined

18. The reciprocal of 0 is

(a) 1 (b) -1 (c) 0 (d) Not defined

19. The reciprocal of any rational number $\frac{p}{q}$, where p and q are integers and $q \neq 0$, is

(a) $\frac{p}{q}$ (b) 1 (c) 0 (d) $\frac{q}{p}$

20. If y be the reciprocal of rational number x, then the reciprocal of y will be

(a) x (b) y (c) $\frac{x}{y}$ (d) $\frac{y}{x}$

21. The reciprocal of $\frac{-3}{8} \times \left(\frac{-7}{13}\right)$ is

(a) $\frac{104}{21}$ (b) $\frac{-104}{21}$ (c) $\frac{21}{104}$ (d) $\frac{-21}{104}$

22. Which of the following is an example of distributive property of multiplication over addition for rational numbers.

(a) $-\frac{1}{4} \times \left\{\frac{2}{3} + \left(\frac{-4}{7}\right)\right\} = \left[-\frac{1}{4} \times \frac{2}{3}\right] + \left[-\frac{1}{4} \times \left(\frac{-4}{7}\right)\right]$

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9. Which of the following is a linear expression:

(a) $x^2 + 1$ (b) $y + y^2$ (c) 4 (d) $1 + z$

10. A linear equation in one variable has

(a) Only one solution

(b) Two solutions

(c) More than two solutions

(d) No solution

11. Value of S in $\frac{1}{3} + S = \frac{2}{5}$

(a) $\frac{4}{5}$ (b) $\frac{1}{15}$ (c) 10 (d) 0

12. $\frac{-4}{3}y = -\frac{3}{4}$, then $y =$

(a) $-\left(\frac{3}{4}\right)^2$ (b) $-\left(\frac{4}{3}\right)^2$ (c) $\left(\frac{3}{4}\right)^2$ (d) $\left(\frac{4}{3}\right)^2$

13. The digit in the tens place of a two digit number is 3 more than the digit in the units place. Let the digit at units place be b. Then the number is

(a) $11b + 30$ (b) $10b + 30$ (c) $11b + 3$ (d) $10b + 3$

14. Arpita's present age is thrice of Shilpa. If Shilpa's age three years ago was x. Then Arpita's present age is

(a) $3(x - 3)$ (b) $3x + 3$

(c) $3x - 9$ (d) $3(x + 3)$

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1. If three angles of a quadrilateral are each equal to 75°, the fourth angle is

(a) 150° (b) 135° (c) 45° (d) 75°

2. For which of the following, diagonals bisect each other?

(a) Square (b) Kite

(c) Trapezium (d) Quadrilateral

3. For which of the following figures, all angles are equal?

(a) Rectangle (b) Kite

(c) Trapezium (d) Rhombus

4. For which of the following figures, diagonals are perpendicular to each other?

(a) Parallelogram (b) Kite

(c) Trapezium (d) Rectangle

5. For which of the following figures, diagonals are equal?

(a) Trapezium (b) Rhombus

(c) Parallelogram (d) Rectangle

6. Which of the following figures satisfy the following properties?

- All sides are congruent.
- All angles are right angles.
- Opposite sides are parallel.

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(a) P

(b) Q

(c) R

(d) S

7. Which of the following figures satisfy the following property?

- Has two pairs of congruent adjacent sides.

(a) P

(b) Q

(c) R

(d) S

8. Which of the following figures satisfy the following property?

- Only one pair of sides are parallel.

(a) P

(b) Q

(c) R

(d) S

9. Which of the following figures do not satisfy any of the following properties?

- All sides are equal.
- All angles are right angles.
- Opposite sides are parallel.

(a) P

(b) Q

(c) R

(d) S

10. Which of the following properties describe a trapezium?

(a) A pair of opposite sides is parallel.

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(b) The diagonals bisect each other.

(c) The diagonals are perpendicular to each other.

(d) The diagonals are equal.

11. Which of the following is a property of a parallelogram?

(a) Opposite sides are parallel.

(b) The diagonals bisect each other at right angles.

(c) The diagonals are perpendicular to each other.

(d) All angles are equal.

12. What is the maximum number of obtuse angles that a quadrilateral can have ?

(a) 1 (b) 2 (c) 3 (d) 4

5. 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

(a) 100 litres (b) 50 litres (c) 25.16 litres (d) 25 litres

6. By travelling at a speed of 48 kilometres per hour, a car can finish a certain journey in 10 hours. To cover the same distance in 8 hours, the speed of the car should be

(a) 60 km/h (b) 80 km/h (c) 30 km/h (d) 40 km/h

7. In which of the following case, do the quantities vary directly with each other?

(a)

x	0.5	2	8	32
y	2	8	32	128

(b)

p	1^2	2^2	3^2	4^2
q	1^3	2^3	3^3	4^3

(c)

r	2	5	10	25	50
s	25	10	5	2	0.5

(d)

u	2	4	6	9	12
v	18	9	6	4	3

8. Which quantities in the previous question vary inversely with each other?

(a) x and y (b) p and q (c) r and s (d) u and v

9. Which of the following vary inversely with each other?

(a) speed and distance covered.

(b) distance covered and taxi fare.

(c) distance travelled and time taken.

(d) speed and time taken.

10. *Both* x and y are in direct proportion, then $\frac{1}{x}$ and $\frac{1}{y}$ are

(a) in indirect proportion.

(b) in inverse proportion.

(c) neither in direct nor in inverse proportion.

(d) sometimes in direct and sometimes in inverse proportion.

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4. Which of the following will have 4 at the units place?

(a) 14^2 (b) 62^2 (c) 27^2 (d) 35^2

5. How many natural numbers lie between 5^2 and 6^2?

(a) 9 (b) 10 (c) 11 (d) 12

6. Which of the following cannot be a perfect square?

(a) 841 (b) 529 (c) 198

(d) All of the above

7. The one's digit of the cube of 23 is

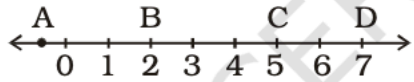
(a) 6 (b) 7 (c) 3 (d) 9

8. A square board has an area of 144 square units. How long is each side of the board?

(a) 11 units (b) 12 units (c) 13 units (d) 14 units

9. Which letter best represents the location of $\sqrt{25}$ on a number line?

(a) A (b) B (c) C (d) D



10. If one member of a pythagorean triplet is 2m, then the other two members are

(a) m, m^2+1

(b) m^2+1, m^2-1

(c) m^2, m^2-1

(d) $m^2, m+1$

11. The sum of successive odd numbers 1, 3, 5, 7, 9, 11, 13 and 15 is

(a) 81 (b) 64 (c) 49 (d) 36

12. The sum of first n odd natural numbers is

(a) $2n+1$ (b) n^2 (c) n^2-1 (d) n^2+1

13. Which of the following numbers is a perfect cube?

(a) 243 (b) 216 (c) 392 (d) 8640

14. The hypotenuse of a right triangle with its legs of lengths $3x \times 4x$ is

(a) $5x$ (b) $7x$ (c) $16x$ (d) $25x$

15. The next two numbers in the number pattern 1, 4, 9, 16, 25 ... are

(a)35, 48 (b) 36, 49 (c) 36, 48 (d) 35,49

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7. Which of the following is a binomial?

(a) $7 \times a + a$ (b) $6a^2 + 7b + 2c$

(c) $4a \times 3b \times 2c$ (d) $6\ (a^2 + b)$

8. Sum of $a - b + ab$, $b + c - bc$ and $c - a - ac$ is

(a) $2c + ab - ac - bc$ (b) $2c - ab - ac - bc$

(c) $2c + ab + ac + bc$ (d) $2c - ab + ac + bc$

9. Product of the following monomials $4p$, $-7q^3$, $-7pq$ is

(a) $196\ p^2q^4$ (b) $196\ pq^4$ (c) $-196\ p^2q^4$ (d) $196\ p^2q^3$

10. Area of a rectangle with length $4ab$ and breadth $6b^2$ is

(a) $24a^2b^2$ (b) $24ab^3$ (c) $24ab^2$ (d) $24ab$

11. Volume of a rectangular box (cuboid) with length = $2ab$, breadth = $3ac$ and height = $2ac$ is

(a) $12a^3bc^2$ (b) $12a^3bc$ (c) $12a^2bc$

(d) $2ab + 3ac + 2ac$

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13. Latika bought a teapot for Rs 120 and a set of cups for Rs 400. She sold teapot at a profit of 5% and cups at a loss of 5%. The amount received by her is

(a) Rs 494 (b) Rs 546 (c) Rs 506 (d) Rs 534

14. A jacket was sold for Rs 1,120 after allowing a discount of 20%. The marked price of the jacket is

(a) Rs 1440 (b) Rs 1400 (c) Rs 960 (d) Rs 866.66

15. A sum is taken for two years at 16% p.a. If interest is compounded after every three months, the number of times for which interest is charged in 2 years is

(a) 8 (b) 4 (c) 6 (d) 9

16. The original price of a washing machine which was bought for Rs 13,500 inclusive of 8% VAT is

(a) Rs 12,420 (b) Rs 14,580 (c) Rs 12,500 (d) Rs 13,492

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2. A cube of side 4 cm is cut into 1 cm cubes. What is the ratio of the surface areas of the original cubes and cut-out cubes?

(a) 1 : 2 (b) 1 : 3 (c) 1 : 4 (d) 1 : 6

3. A circle of maximum possible size is cut from a square sheet of board. Subsequently, a square of maximum possible size is cut from the resultant circle. What will be the area of the final square?

(a) $\frac{3}{4}$ of original square. (b) $\frac{1}{2}$ of original square.

(c) $\frac{1}{4}$ of original square. (d) $\frac{2}{3}$ of original square.

4. What is the area of the largest triangle that can be fitted into a rectangle of length l units and width w units?

(a) $lw/2$ (b) $lw/3$ (c) $lw/6$ (d) $lw/4$

5. If the height of a cylinder becomes $\frac{1}{4}$ of the original height and the radius is doubled, then which of the following will be true?

(a) Volume of the cylinder will be doubled.

(b) Volume of the cylinder will remain unchanged.

(c) Volume of the cylinder will be halved.

(d) Volume of the cylinder will be $\frac{1}{4}$ of the original volume.

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11. _____ displays data that changes continuously over periods of time.

12. The relation between dependent and independent variables is shown through a _____.

13. We need _____ coordinates for representing a point on the graph sheet.

14. A point in which the x-coordinate is zero and y-coordinate is non-zero will lie on the _____

15. The horizontal and vertical line in a line graph are usually called _____ and _____.

16. The process of fixing a point with the help of the coordinates is known as _____ of the point.

17. The distance of any point from the y-axis is the _____ coordinate.

18. All points with y-coordinate as zero lie on the _____.

19. For the point (5, 2), the distance from the x-axis is _____ units.

20. The x-coordinate of any point lying on the y-axis will be _____.

21. The y-coordinate of the point (2, 4) is _____.

22. In the point (4, 7), 4 denotes the _____.

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