

SECTION A (1X10=10)

1. Rational numbers are closed under division. (T/F)
2. Write multiplicative inverse of $\frac{1}{2} + \frac{1}{3}$.
3. What will be the sum of all exterior angles of the regular octagon?
4. Can you construct a quadrilateral ABCD whose angles are given , angle A= 120° , Angle B= 75° , angle C= 100° and angle D= 70° ? Give reason for your answer.
5. Write all possible outcomes if two coins are tossed simultaneously.
6. Without actual addition find the value of:- $1+3+5+7+9+11+13+15+17+19+21$. State the logic behind this.
7. Find the value of $\sqrt{156.25}$, if the value of $\sqrt{15625}$ is 125.
8. Find the value of $\sqrt{256}$.
9. Find the value of $\sqrt[3]{512}$.
10. A perfect cube can end with two zeros . (T/F).

SECTION B (2X10=20)

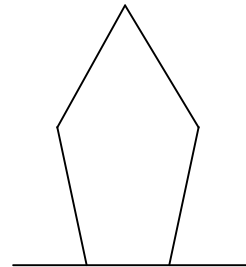
11. Write 5 rational numbers between $\frac{1}{3}$ and $\frac{1}{2}$.
12. Represent the following in the number line. (i) $\frac{7}{4}$ (ii) $\frac{-1}{2}$.

OR Solve:- $\frac{-7}{4} + \frac{5}{3} + \frac{-5}{6} + \frac{1}{3} + \frac{-1}{2}$

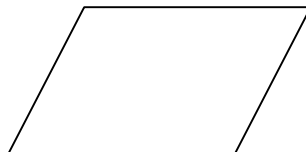
13. Ratio of the angles of a triangle is 1:2:3. Find all angles.

OR Find the value of m in $3m = 5m - \frac{8}{5}$.

14. Find the value of x in the given figure:-



15. If MATH is a parallelogram find the value of x and y with proper mathematical reason:-



16. In a parallelogram LORD, $\angle P = (2x + 10)^\circ$ and $\angle Q = (3x + 20)^\circ$. Find all the angles of the parallelogram.
17. There is a pack of well shuffled pack of 52 cards. One card is drawn at random. What will be the probability that the card is:- (i) either a black card or a queen
(ii) a jack.

18. On the basis of the given Histogram answer the following questions:-

- (i) What is the class size?
- (ii) How many students obtained less than 10 marks?
- (iii) How many students obtained 30 or more marks but less than 40?
- (iv) If passing marks are 30, what is the number of failures?



Marks

19. Find the PYTHAGOREN TRIPLET in which one of the member is 35.

20. Find the smallest square number which is divisible by each 6,9 and 15.

SECTION C (EACH QUESTION CARRY FOUR MARKS)

21. Divide the sum of $\frac{4}{5}$ and $\frac{14}{15}$ by the product of $\frac{4}{7}$ and $\frac{21}{20}$.

22. Ravi's mother's present age is five times the present age of Ravi. After 7 years, their ages will add up to 44 years. Find their present ages.

23. The numerator of a fraction is 6 less than the denominator. If 3 is added to the numerator, the fraction is equal to $\frac{2}{3}$. What is the original fraction?

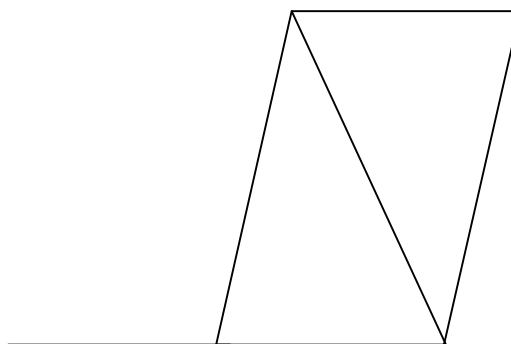
OR

Two numbers are such that the ratio between them is 3:5. If each is increased by 10, the ratio between the new numbers so formed is 5:7. Find the original number.

24. If the exterior angle of a regular polygon is 24° , find the value of:-

- (i) Number of sides of the polygon
- (ii) Each interior angle of the polygon.
- (iii) Sum of all interior angles of the polygon.
- (iv) Sum of all exterior angles of the polygon.

25. In the adjoining figure HOPE is a parallelogram. Find the measure of angle a,b,c and d. state the geometrical truths you use to find them.



26. Fill the appropriate answers(MENTAL MATHS):-

- (i) The inverse operation of square is.....
- (ii) The square of any negative number is always anumber.
- (iii) Numbers ending with , , and are never a perfect square.
- (iv) The unit's digit in the square of $(36)^2$ is

27. Is 9408 a perfect square? If not, by what number it should be multiplied to make it a perfect square?

28. What number should be subtracted from 26535 to make it a perfect square? Also find the square root of the new number.

29. The volume of a cube is $1728m^3$. Find the sides of the cube.

30. Find the value of:-
- (i) $\sqrt[3]{27} + \sqrt[3]{0.008} + \sqrt[3]{0.064}$
 - (ii) $\sqrt[3]{140} \times \sqrt[3]{2450}$.

Section D(Each question carry 5 marks)

31. Solve:- (a) $\frac{17(2-x) - 5(x+12)}{1-7x} = 8$

(b) $13(y-4) - 3(y-9) - 5(y+4) = 0$

32. Construct a quadrilateral ABCD in which AB=6 cm, BC = 4cm, CD=4cm, angle B = 95° and angle C = 90° . Write proper steps of construction.

33. Construct a square of side 5cm with proper steps of construction.

34. The following data shows the number of students opting different subjects in a school. Construct a pie-diagram to represent the data given below:-

SUBJECTS	ENGLISH	MATHS	PHYSICS	CHEMISTRY	ECONOMICS	COMMERCE
No.OF STUDENTS	45	60	20	30	10	15

35. 17 cards numbered 1,2,3,.....17 are put in a box and mixed thoroughly. One person draws a card from the box. Find the probability that the number on the card is:

- An odd number
- A prime number
- An even number
- Divisible by 3
- Divisible by both 2 & 3.

36. The ratio of three numbers are 2:3:4. The sum of their cubes is 33957. Find the numbers.
