Virudhunagar District
Common Half Yearly Examination – December 2024

VNR8M

Standard 8
MATHS

Time: 3.00 Hrs.   Marks: 100

                                                                                    10×1=10

I. Choose the correct answer:

1) Which of these rational numbers which have additive inverse?

   a) 7   b) $\dfrac{-5}{7}$ c) 0   d) all of these

2) If $\dfrac{10^x}{10^{-3}} = 10^9$ then the value of x is _____.

   a) 4   b) 5   c) 6   d) 7

3) A line segment which joins any two points on a circle is a _____.
   a) diameter   b) radius   c) chord   d) circular arc

4) If $x^2 - y^2 = 16$ and $x + y = 8$ then $(x - y)$ is _____.
   a) 8   b) 3   c) 2   d) 1

5) A fruit vendor sells fruits for ₹ 200 gaining ₹ 40. His gain percentage is _____.

   a) 20%   b) 22%   c) 25%   d) $16\dfrac{2}{3}\%$

6) In $\triangle ABC \sim \triangle PQR$ in which $\angle A = 53^\circ$, $\angle Q = 77^\circ$ then $\angle R$ is _____.
   a) 50°   b) 60°   c) 70°   d) 80°

7) How many 2 digit numbers contain the number 7?
   a) 10   b) 18   c) 19   d) 20

8) Two numbers are said to be Co-prime numbers if their H.C.F is _____.
   a) 2   b) 3   c) 0   d) 1

9) The area of parallelogram = _____ sq.units.

   a) $\dfrac{1}{2} \times d_1 \times d_2$ b) $\dfrac{1}{2} \times b \times h$ c) bh   d) $\dfrac{1}{2} \times d\,(h_1 + h_2)$

10) The cross section of a solid cylinder is _____.
    a) Triangle   b) Square   c) Circle   d) Cuboid

                                                                                    5×1=5

II. Fill in the blanks:

11) The ones digit in the square of 77 is _____.
12) The value of m in the equation 8m = 56 is _____.
13) The radius of a circle of diameter 30 cm is _____.
14) (0, –5) point lies on _____ axis.
15) The centroid of a triangle divides each medians in the ratio _____.

                                                                                    4×1=4

III. Say True or False:

16) The rational number which is its own reciprocal is –1.

17) Depreciation value is calculated by the formula, $P\left(1 - \dfrac{r}{100}\right)^n$.

18) In a right angled triangle, the hypotenuse is the greatest side.

19) The co-ordinate of the origin are (1, 1).

                                                                                    5×1=5

IV. Match it:

20) Area of the quadrant   -   Direct proportion
21) Circumference of a circle   -   x = 4
22) Purchase – Spending   - 20^{-3}

23) 20 = 6x–4   - $\dfrac{1}{4}\pi r^2$

24) $4^{-3} \times 5^{-3}$ - $2\pi r$

V. Answer any 10 questions: 10×2=20

25) Is 108 a perfect square number?
26) List any five rational numbers between $\dfrac{1}{4}$ and $\dfrac{7}{20}$.
27) Factorise: $m^2 + m - 72$
28) A circle of radius 70 cm is divided into 5 equal sectors. Find the area of each of the sectors.

29) If x% of 600 is 450. Find the value of x.

30) The diagonals of the rhombus is 12 cm and 16 cm. Find its perimeter.

31) Shanthi has 5 chudithar sets and 4 frocks. In how many possible ways can she wear either a chudithar or a frock?

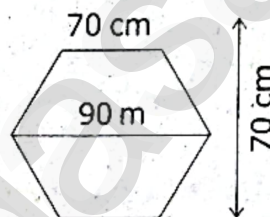32) Using repeated subtraction method, find the H.C.F of the following: 280 and 420
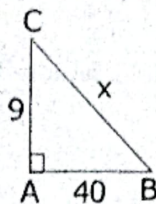
33) Find the unknown side.

34) The bacteria in a culture grows by 5% in the first hour, decreases by 8% in the second hour and again increases by 10% in the third hour. Find the count of the bacteria at the end of 3 hours. If its initial count was 10,000.

35) Find the quadrants without plotting the points on a graph sheet: $(3, -4), (2, 0), (-7, 2), (-3, -5)$

36) Find x so that $(-7)^{x+2} \times (-7)^5 = (-7)^{10}$.

37) Verify Euler's formula for Faces = 12, Vertices = 20, Edges = 30.
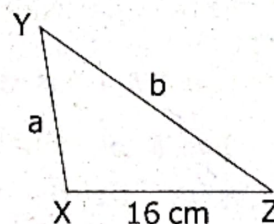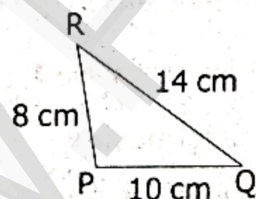
VI. Answer the following: (any 8)   8×5=40

38) Arrange in ascending and descending order: $\dfrac{-3}{5}, \dfrac{7}{-10}, \dfrac{-15}{20}, \dfrac{14}{-30}, \dfrac{-8}{15}$

39) Find square root by long division method: 4.18609

40) i) Find the product : $(2x+3)(2x-4)$
    ii) Divide : $(5y^3 - 25y^2 + 8y)$ by $5y$

41) The door mat which is hexagonal in shape has the following measures as given in the figure. Find its area.

42) Find the central angle of the sector whose area is 462 cm², r = 21 cm. ($\pi = \dfrac{22}{7}$)

43) 210 men working 12 hours a day can finish a job in 18 days. How many men are required to finish the job in 20 days working 14 hours a day?

44) Using repeated division method find the H.C.F 184, 230 and 276.

45) In figure if ΔPQR ~ ΔXYZ find a and b.

46) Expand: $(x+3)(x+5)(x+2)$

47) Verify Associative property for addition: $a = \dfrac{-1}{2}, b = \dfrac{3}{5}$ and $c = \dfrac{-7}{10}$.

48) The income of a person is increased by 10% and then decreased by 10%. Find the change in his income.

VII. Answer the following: 2×8=16

49) a) Construct a quadrilateral ABCD with AB = 7 cm, AD = 5 cm, CD = 5 cm, ∠BAC = 50°, ∠ABC = 60°. Also find its area.   **(OR)**
    b) Construct the rhombus with given measurements and find their area FACE, FA = 6 cm and FC = 8 cm.

50) a) Plot the following points in a graph sheet.
       $(2, 0), (3, 2), (-1, -1), (-2, +3), (3, -1), (0, -4)$ **(OR)**
    b) Draw the graph of the following y = 6.