



Rakshita  
Question Paper

Reg. No.:

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# COMMON HALF YEARLY EXAMINATION - 2025

## Std - VIII

Time : 2.30 Hrs

Mathematics

Marks: 100

14 x 1 = 14

### I. Choose the correct answer:

- 5/4 is a rational number which lies between .....  
a) 0 and -5/4      b) -1 and 0      c) -1 and -2      d) -4 and -5
- $\frac{3}{4} \times \left[ \frac{1}{2} - \frac{1}{4} \right] = \frac{3}{4} \times \frac{1}{2} - \frac{3}{4} \times \frac{1}{4}$  illustrates that multiplication is distributive over .....  
a) addition      b) subtraction      c) multiplication      d) division
- If  $\frac{10^x}{10^{-3}} = 10^9$ , then x is  
a) 4      b) 5      c) 6      d) 7
- $\sqrt{48}$  is approximately equal to  
a) 5      b) 6      c) 7      d) 8
- The longest chord of a circle is .....  
a) diameter      b) radius      c) circumference      d) arc
- Circumference of a semicircle .....  
a)  $(\pi+2)r$       b)  $\pi r^2$       c)  $2\pi r$       d)  $\frac{1}{4} \pi r^2$
- If the area of a rectangular land is  $(a^2 - b^2)$  sq.units whose breadth is  $(a - b)$  then, its length is .....  
a)  $a-b$       b)  $a+b$       c)  $a^2-b$       d)  $(a+b)^2$
- The largest of 3 consecutive numbers is  $x+1$ , then the smallest number is  
a)  $x$       b)  $x+1$       c)  $x+2$       d)  $x - 1$
- What is the marked price of a hat which is bought for ₹210 at 16% discount?  
a) ₹243      b) ₹176      c) ₹230      d) ₹250
- The cost of a machine is ₹18000 and it depreciates at  $16 \frac{2}{3}\%$  annually. Its value after 2 years will be .....  
a) ₹12000      b) ₹12500      c) ₹15000      d) ₹16500
- If  $\triangle ABC \sim \triangle PQR$  in which  $\angle A = 53^\circ$  and  $\angle Q = 77^\circ$ , then  $\angle R$  is .....  
a)  $50^\circ$       b)  $60^\circ$       c)  $70^\circ$       d)  $80^\circ$
- The sides of a right angled triangle are in the ratio 5:12:13 and its perimeter is 120 units then, the sides are .....  
a) 25, 36, 59      b) 10, 24, 26      c) 36, 39, 45      d) 20, 48, 52
- How many 2 digit numbers contain the number 7?  
a) 10      b) 18      c) 19      d) 20
- Two numbers are said to be co-prime numbers if their HCF is .....  
a) 2      b) 3      c) 0      d) 1



**II. Answer any 10 (Q.No. 28 is compulsory)**

15.  $\frac{-11}{5}, \frac{-21}{8}$  compare the rational numbers.

16. Simplify :  $\sqrt{1\frac{9}{16}}$

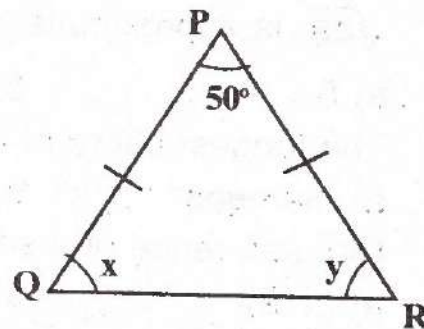
17. Find the smallest number by which 675 must be multiply to obtain a perfect cube.

18. A circular gymnasium ring of radius 35 cm is divided into 5 equal arcs shaded with different colours. Find the length of each arcs.

19. Length of the arc is 48m, and radius is 10m. Find the area of the sector.

20. Verify Euler's formula for the table given below.

S.No.	Faces	Vertices	Edges
i)	?	6	14
ii)	8	?	10

21. Divide  $(5y^3 - 25y^2 + 8y)$  by  $5y$ 22. Expand  $(x+4)^3$ 23.  $P = ₹5000$ ,  $r = 4\%$ ,  $n = 2$  years. Find the difference between simple interest and compound interest.24. Find the value of  $x$  in the figure.

25. Can a right triangle have sides that measures 5cm, 12cm and 13cm.

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

27. Find the HCF of 42 and 70 using repeated subtraction method.

28. Gopi sold a laptop at 12% gain. If it had been sold for ₹1200 more, the gain would have been 20%. Find the cost of the laptop.

**III. Answer any 10 (Q.No. 42 is compulsory):**

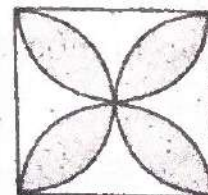
10 x 5 = 50

29. Arrange the following into ascending and descending order

$$\frac{-17}{10}, \frac{-7}{5}, 0, \frac{-2}{4}, \frac{-19}{20}$$

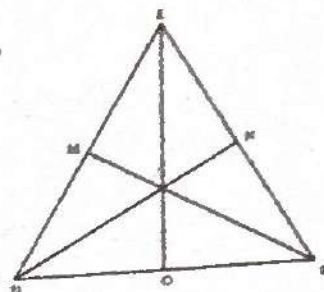
30. Find the square root of 459684 by long division method.

31. Solve  $x \cdot \frac{5^5 \times 5^{-4} \times 5^x}{5^{12}} = 5^{-5}$

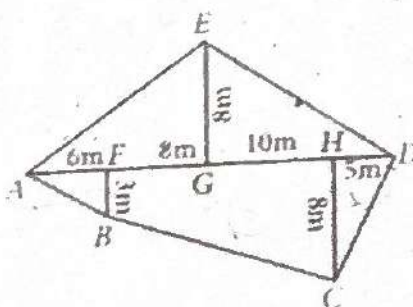
32. Central angle is  $120^\circ$ , diameter is 12.6cm. Find the length of arc, area and perimeter of the sector.33. Find the area of the shaded region in the square of side 10cm as given in the figure. ( $\pi=22/7$ )



34.  $81(p^3q^2r^3 + 2p^3q^3r^2 - 5p^2q^2r^3) + (3pqr)^2$
35. Factorise:  $3x^3 - 45x^2y + 225xy^2 - 375y^3$
36. A mother is five times as old as her daughter. After 2 years, the mother will be four times as old as her daughter. What are their present ages?
37. A branded Air-Conditioner has a marked price of ₹38000. There are 2 options given for the customer.
- Selling price is the same ₹38000 but with attractive gifts worth ₹3000
  - Discount of 8% on the marked price but no free gifts.
- Which offer is better?
38. Find the CI on ₹15000 for 3 years if the rates of interests are 15%, 20% and 25% for the I, II and III years respectively.
39. A soap factory produces 9600 soaps in 6 days, working 15 hours a day. In how many days will it produce 14400 soaps working 3 more hours a day?
40. In  $\triangle DEF$ , DN, EO, FM are medians and point P is centroid. Find the following
- If  $DE = 44$ , then  $DM = ?$
  - If  $PD = 12$ , then  $PN = ?$
  - If  $DO = 8$ , then  $FD = ?$
  - If  $OE = 36$ , then  $EP = ?$



41. Kalai wants to cut identical squares as big as she can, from a piece of paper measuring 168mm, and 196 mm. What is the side of the biggest square? (To find HCF using repeated subtraction method)
42. Find the area of the irregular polygon fields whose measures are as given in the figure.



$$2 \times 8 = 16$$

#### IV. Answer the following:

43. a) Construct a trapezium CARD in which  $CA \parallel DR$ ,  $CA = 9\text{cm}$ ,  $\angle CAR = 70^\circ$ ,  $AR = 6\text{cm}$  and  $CD = 7\text{cm}$ . Also find its area. (OR)
- b) Construct a rhombus FACE with  $FA = 6\text{cm}$ , and  $FC = 8\text{cm}$ . Also find its area.
44. a) A line passing through  $(4, -2)$  and intersects the y-axis at  $(0, 2)$ . Find a point on the line in the second quadrant. (OR)
- b) If the points  $P(5, 3)$ ,  $Q(-3, 3)$ ,  $R(-3, -4)$  and  $S$  form a rectangle, then find the coordinate of  $S$ .