

## COMMON HALF YEARLY EXAMINATION - 2023

Standard VIII

Reg.No.

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B

## MATHEMATICS

Time : 2.30 hrs

Part - I

Marks : 100

14 x 1 = 14

I. Choose the correct answer:

- The number which is subtracted from  $-\frac{6}{11}$  to get  $\frac{8}{9}$  is \_\_\_\_\_.  
 a)  $\frac{34}{99}$                       b)  $\frac{-142}{99}$                       c)  $\frac{142}{99}$                       d)  $\frac{-34}{99}$
- $\frac{3}{4} \div \left(\frac{5}{8} + \frac{1}{2}\right) =$  \_\_\_\_\_.  
 a)  $\frac{13}{10}$                       b)  $\frac{2}{3}$                       c)  $\frac{3}{2}$                       d)  $\frac{5}{8}$
- Which of the following illustrates the inverse property for addition?  
 a)  $\frac{1}{8} - \frac{1}{8} = 0$                       b)  $\frac{1}{8} + \frac{1}{8} = \frac{1}{4}$                       c)  $\frac{1}{8} + 0 = \frac{1}{8}$                       d)  $\frac{1}{8} - 0 = \frac{1}{8}$
- $\sqrt{48}$  is approximately equal to \_\_\_\_\_.  
 a) 5                      b) 6                      c) 7                      d) 8
- 0.000000002020 in scientific form is \_\_\_\_\_.  
 a)  $2.02 \times 10^9$                       b)  $2.02 \times 10^{-9}$                       c)  $2.02 \times 10^{-8}$                       d)  $2.02 \times 10^{-10}$
- The central angle of a circle is \_\_\_\_\_.  
 a)  $180^\circ$                       b)  $360^\circ$                       c)  $270^\circ$                       d)  $90^\circ$
- 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)  $(a + b)^2$
- $(x + 4)$  and  $(x - 5)$  are the factors of \_\_\_\_\_.  
 a)  $x^2 - x + 20$                       b)  $x^2 - 9x - 20$                       c)  $x^2 + x - 20$                       d)  $x^2 - x - 20$
- 12% of 250 litre is the same as \_\_\_\_\_ of 150 litre.  
 a) 10%                      b) 15%                      c) 20%                      d) 30%
- 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 time taken for ₹ 4400 to become ₹ 4851 at 10% compounded half yearly is \_\_\_\_\_.  
 a) 6 months                      b) 1 year                      c)  $1\frac{1}{2}$  years                      d) 2 years
- 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 hypotenuse of a right angled triangle of sides 12 cm and 16 cm is \_\_\_\_\_.  
 a) 28 cm                      b) 20 cm                      c) 24 cm                      d) 21 cm
- How many outcomes can you get when you toss three coins once?  
 a) 6                      b) 8                      c) 3                      d) 2

II. Answer any 10 questions.

15. Find atleast two rational numbers between  $\frac{-3}{4}$  and  $\frac{-2}{5}$

16. Evaluate :  $\frac{9}{132} \times \frac{-11}{3}$

17. Examine if 725 is a perfect square.

18. Length of the arc = 48 m,  $r = 10$  m, find the area of the sector.

19. Expand :  $5x(2y - 3)$

20. Expand :  $4p^2 - 25q^2$

21. Factorise :  $y^2 - 10y + 25$

22. Solve :  $2x + 5 = 9$

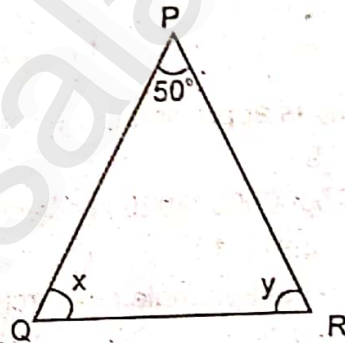
23. A number when decreased by 20% gives 80. Find the number.

24. Find the compound interest on ₹ 3200 at 2.5% p.a for 2 years, compounded annually.

25. A and B together can do a piece of work in 16 days and A alone can do it in 48 days.

How long will B take to complete the work?

26. Find the unknowns in the figure.



27. An isosceles triangle has equal sides each 13 cm and a base 24 cm in length. Find its height.

28. Using repeated subtraction method, find the HCF of 36 and 80.

### Part - III

III. Answer any 10 questions.

10 x 5 = 50

29. Find  $(a + b) \div (a - b)$  if  $a = \frac{-3}{5}$ ,  $b = \frac{2}{15}$

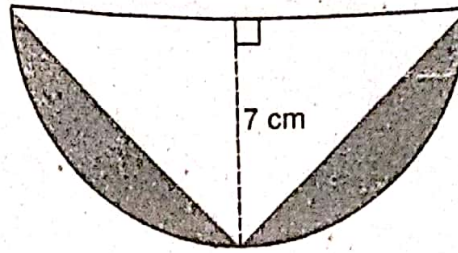
30. Verify the distributive property  $a \times (b + c) = (a \times b) + (a \times c)$  for the rational numbers

$$a = \frac{-1}{2}, b = \frac{2}{3} \text{ and } c = \frac{-5}{6}$$

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

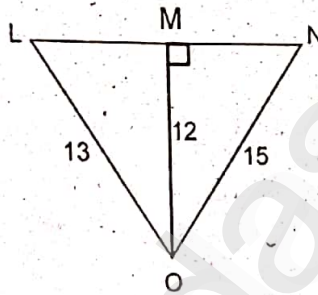
32. The radius of a sector is 21 cm and its central angle is  $120^\circ$ , find (i) the length of the arc (ii) the area of the sector (iii) perimeter of sector  $\left(\pi = \frac{22}{7}\right)$

33. Find the area of the shaded part in the given figure. ( $\pi = 3.14$ )



34. Expand :  $(104)^3$

35. The length of a rectangle is  $\frac{1}{3}$  of its breadth. If its perimeter is 64 m, then find the length and the breadth of the rectangle.
36. By selling a bicycle for ₹ 4275, a shopkeeper loses 5%. For how much should he sell it to have a profit of 5%?
37. The bacteria in a culture grows by 5% in the first hour, decreased by 8% in the second hour and again increase by 10% in the third hour. Find the count of the bacteria at the end of 3 hours if its initial count was 10000.
38. A soap factory produces 9600 soaps in 6 days working 15 hours a day. In how many days will it produce 14400 soaps working three more hours a day?
39. Find LM, MN, LN and also the area of  $\triangle LON$ .



40. Find the volume of the cuboid whose dimensions are  $(x + 2)$ ,  $(x - 1)$  and  $(x - 3)$ .
41. What is the square root of cube root of 46656?
42. Using repeated division method, find the HCF of 320, 120 and 95.

#### Part - IV

#### IV. Answer all the questions.

2 x 8 = 16

43. a) Construct a quadrilateral MATH with  $MA = 4$  cm,  $AT = 3.6$  cm,  $TH = 4.5$  cm,  $MH = 5$  cm and  $\angle A = 85^\circ$ . Also find its area.  
(OR)
- b) Construct a parallelogram ARTS,  $AR = 6$  cm,  $RT = 5$  cm and  $\angle ART = 70^\circ$ . Also find its area.
44. a) Graph equation  $y = x + 1$   
(OR)
- b) Draw the graph  $y = -3x$

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