1. Insert one digit between 4 and 7 and another digit between 9 and 8 in the number 473598 to make a new number that is divisible by 24. How many such numbers can be made in all?
   (a) 7  (b) 5  (c) 4  (d) 9

2. In a parallelogram ABCD, AB = 15 cm and BC = 14 cm. Find the length of the diagonal BD if BH = 12cm.
   (a) 9cm  (b) 13cm  (c) 10cm  (d) 11cm

3. When the decimal point of a certain positive decimal number is moved four places to the right, the new number is four times the reciprocal of the original number. What is the original number?
   (a) 0.2  (b) 0.02  (c) 0.002  (d) 0.0002

4. The sum of three numbers is 20. The first is 4 times the sum of the other two. The second is 7 times the third. What is the product of all three numbers?
   (a) 400  (b) 40  (c) 100  (d) 28

5. The average of the numbers 1, 2, 3, ……. 98, 99 and ‘x’ is 100x. Find the value of x?
   (a) \( \frac{49}{101} \)  (b) \( \frac{50}{101} \)  (c) \( \frac{1}{2} \)  (d) \( \frac{51}{101} \)

6. Sunil and Sachin play a chess match consisting of 12 games. In each game the winner scores 5 points and the loser scores 3 points. At the end of the match Sachin’s total score is 44 points. How many games did Sunil win if they were no draws in the match?
   (a) 4  (b) 6  (c) 8  (d) 3

7. Four points are on a line segment as shown.
   If \( EF : FG = 1 : 2 \) and \( FG : GH = 8 : 5 \), then \( EF : FH = ? \)
   (a) 4:13  (b) 1:13  (c) 1:7  (d) 3:13

8. Some boys and girls of a class decide to visit a factory. Initially 40% of the group are girls. Shortly thereafter 2 girls leave and 2 boys join the group, and then 30% of the group are girls. How many girls were initially in the group?
   (a) 12  (b) 6  (c) 10  (d) 8

9. Brick Layer Vitthal takes 9 hours to build a chimney alone and brick layer Raju takes 10 hours to build
the same chimney alone. When they work together they talk a lot and their combined output is decreased by 10 bricks per hour. Working together they build the chimney in 5 hours. How many bricks are in the chimney?
(a) 500  (b) 900  (c) 950  (d) 1000

10. The point ‘O’ is the centre of the circle circumscribed about the triangle ABC, with \( \angle BOC = 120^\circ \) and \( \angle AOB = 140^\circ \) as shown in the figure. Find \( \angle ACB \).

![Diagram of triangle ABC with centre O]

(a) 70°  (b) 60°  (c) 55°  (d) 50°

11. Two circular wheels of same radius ‘r’ cm are at a fixed distance of ‘a’ cm from one another as shown in the figure the minimum length (in cm) of the fan belt which will pass around both the wheels is:

![Diagram of two circular wheels with distance 'a']

(a) \( \frac{a + \pi r}{2} \)  (b) \( \frac{a + \pi r}{2} \)  (c) \( 2a + \pi r \)  (d) \( 2(a + \pi r) \)

12. A man buys two varieties of mangoes, first at Rs. 320 for 240 mangoes and second at Rs. 640 for 400 mangoes. He mixes both varieties and sells them at 16 for Rs. 30. Find his profit percent?
(a) 20%  (b) 40%  (c) 25%  (d) 30%

13. Which of the following is the same as \( 2000 \left( \frac{2000}{2000} \right) \)
(a) \( 4000^{2000} \)  (b) \( 2000^{4000} \)  (c) \( 2000^{4000000} \)  (d) \( 2000^{2001} \)

14. A triangle has side lengths 10cm, 10cm and 12cm. A rectangle has diagonal 10cm and area equal to the area of the triangle. What is the perimeter of this rectangle?
(a) 28 cm  (b) 24 cm  (c) \( 2\sqrt{10} \) cm  (d) Not possible

15. In the figure given besides, what is the measure of the greatest angle in any of the triangle?

![Diagram of a triangle with various angles marked]

(a) 154°  (b) 160°  (c) 108°  (d) 145°
## Answer Key

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