

SWO International Mathematics Olympiad 2021-22

Class 8th

Questions: 20

Time Duration: 30 Minutes

There are 4 Sections- 5 Questions in Section-1, 5 Questions in Section-2, 5 Questions in Section-3, 5 Questions in Section-4.

Section 1- (Linear equations and square root)

1. Find the value of

$$\frac{4}{7} \times \left\{ \left(\frac{-2}{3} \right) - \frac{1}{2} \right\} \text{ and } \left\{ \frac{4}{7} \times \left(\frac{-2}{3} \right) \right\} - \left(\frac{4}{7} \times \frac{1}{2} \right)$$

- a. $-2/3$
- b. $2/3$
- c. $3/3$
- d. $-3/3$ (a)

2. Find the square of 53.

- a. 2808
- b. 2807
- c. 2806
- d. 2809 (d)

3. Write a Pythagorean triplet having 22 as one of its member

- a. 200
- b. 300
- c. 100
- d. 400 (c)

4. Calculate the square root of 784.

- a. 28
- b. 29
- c. 30
- d. 31 (a)

5. Calculate the square root of 729.

- a. 25

- b. 26
 - c. 27
 - d. 28
- (c)

Section 2- (square roots, cube roots, exponents and percentages)

6. What is the square root of 7.29?

- a. 5.7
 - b. 4.7
 - c. 3.7
 - d. 2.7
- (d)

7. Find the cube root of 15625 by the prime factorization method

- a. 24
 - b. 25
 - c. 26
 - d. 27
- (b)

8. Express 1730000000000 in exponent form.

- a. 1.73×10^{12}
 - b. 1.74×10
 - c. 1.73×10
 - d. 1.73×12
- (a)

9. If there are 20 boys out of 50 students in the class then find the percentage of boys.

- a. 40%
 - b. 50%
 - c. 60%
 - d. 70%
- (a)

10. If the price of one jean is 2500 Rs. and we are getting a discount of 500 Rs. then what is the sale price of the jeans? What is the discount percentage?

- a. 30%
 - b. 10%
 - c. 40%
 - d. 20%
- (d)

Section 3- (Discounts, profit and loss, algebra, and linear equations)

11. If the price of a product in the mall is 498.80 and it is available at a discount of 15 % then how would you estimate the amount to be paid?

- a. Rs. 75
- b. Rs. 400
- c. Rs. 425
- d. Rs. 80 (c)

12. If a shopkeeper bought 250 books for 75 each. He spent 500 Rs. on the binding of books. Then he sold it in 20000 Rs. Calculate the profit or loss percentage.

- a. 3.60%
- b. 3.70%
- c. 3.80%
- d. 3.90% (d)

13. A sum of Rs. 20,000 is invested by Honey for 2 years at an interest of 8% compounded annually. Find the Compound Interest (C.I.) and the amount she has to pay at the end of 2 years.

- a. Rs. 23328
- b. Rs. 23327
- c. Rs. 23326
- d. Rs. 23325 (a)

14. Use the Identity $(x + a)(x + b) = x^2 + (a + b)x + ab$ to find the value of 501×502

- a. 251502

- b. 251503
- c. 251504
- d. 251505 (a)

15. Renu's age is four times that of her younger brother. Five years back her age was 9 times her brother's age. Find their present ages.

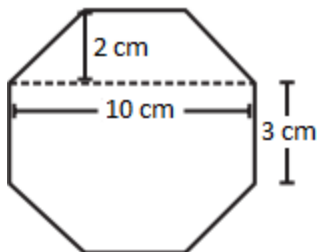
- a. 30 years
- b. 31 years
- c. 32 years
- d. 33 years (c)

Section 4- (Mensuration and Algebra)

16. If the opposite angles of a parallelogram are $(3x + 5)^\circ$ and $(61 - x)^\circ$, then calculate all the four angles of the parallelogram.

- a. 44, 44, 133, 133
- b. 45, 44, 133, 133
- c. 46, 44, 133, 133
- d. 47, 47, 133, 133 (d)

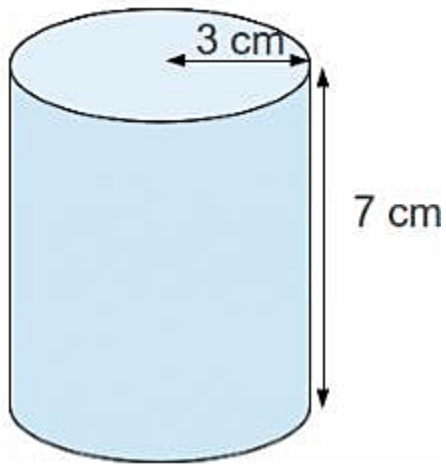
17. Find the area of the given octagon.



- a. 54 square cm
- b. 55 square cm

- c. 56 square cm
- d. 57 square cm (c)

18. If there is a cold drink can whose height is 7 cm and the radius of its round top is 3 cm then what will be the lateral surface area and volume of that cylinder? ($\pi = 3.14$)



- a. 131.88 square cm, 197.82 square cm
- b. 132.88 square cm, 198.82 square cm
- c. 133.88 square cm, 199.82 square cm
- d. 134.88 square cm, 196.82 square cm (a)

19. Using Euler's formula, find the number of faces if the number of vertices is 6 and the number of edges is 12.

- a. 8
- b. 7
- c. 6
- d. 5 (a)

20. Solve $z(5z^2 - 80) \div 5z(z + 4)$

- a. $z + 4$
- b. $Z + 5$

c. Z - 4

d. z - 5

(c)