



RAMAGYA SCHOOL, NOIDA
VIII/MATHEMATICS/2017-18
OLYMPIAD PRACTICE WORKSHEET

(Concept based)

1. $px^2 + qx + r$ is _____ type of polynomial
(A) Monomial (B) Binomial (C) Trinomial (D) None of these
2. Which of the following are the factors of $1 - x^2$?
(A) $(x + 1)(x - 1)$ (B) $(1 - x)(1 + x)$ (C) $(1 - x)(1 - x)$ (D) $(1 + x)(1 + x)$
3. For a non-zero rational number z , $(z^{-2})^3$ is equal to
(A) z^6 (B) z^{-6} (C) z^1 (D) z^4
4. What should be the rate of interest per annum if interest is calculated quarterly?
(A) reduced to half (B) reduced to one fourth (C) is doubled (D) becomes four times
5. What is the reciprocal of $(-3/4)^0$?
(A) -1 (B) 1 (C) -4/3 (D) 4/3
6. A number ending in 9 will have the unit place of its square as _____
(A) 3 (B) 9 (C) 1 (D) 6

(Application based)

7. Two – thirds of a consignment was sold at a profit of 6% and the rest at a loss of 3%. If there was an overall profit of Rs. 540, the value of the consignment was _____
(A) Rs. 15000 (B) Rs. 18000 (C) Rs. 16000 (D) None of these
8. Rita and Mita together can do a work in 4 days. Rita alone takes 6 days to do the same work. In how many days can Mita alone do the work?
(A) 8 (B) 10 (C) 14 (D) 12
9. A School collected Rs. 2, 02, 500 as fees from students, If each student paid as much money as there were students, find the number of students in the school.
(A) 210 (B) 320 (C) 250 (D) 450
10. A bank offers 5% compound interest calculated on half-yearly basis. A customer deposits Rs. 1600 each on 1st January and 1st July of a year. At the end of the year, the amount he would have gained by way of interest is:
(A) Rs. 120 (B) Rs. 121 (C) Rs. 122 (D) Rs. 123

(HOTS)

11. Find the sum of money invested, if the difference between simple and compound interest (compounded annually) on the sum of money for two years at 10% per annum is Rs 65.

- (A) Rs 6500 (B) Rs 6565 (C) Rs 65065 (D) Rs 65650

12. Three numbers are in the ratio 2 : 3 : 4. The sum of their cubes is 33957. The numbers are _____

- (A) 21, 28, 32 (B) 14, 18, 21 (C) 12, 15, 17 (D) 14, 21, 28

13. If $x - 1/x = 3$, then find the value of $x^4 + 1/x^4$.

- (A) 121 (B) 119 (C) 117 (D) 101

14. What is the least number which when divided by 5, 6, 9, 12 gives remainder 1 in each case and exactly divisible by 13?

- (A) 361 (B) 721 (C) 1801 (D) 3601

(Value based)

15. Find the area of a square whose diagonals are of length 12 cm.

- (A) 72 cm^2 (B) 136 cm^2 (C) 75 cm^2 (D) 82 cm^2

16. Which of the following expression has $(7p - q - 3r)$ as one of the factors?

- (A) $49p^3 - q^2 - 9r^2 - 14pq$ (B) $49p^2 + q^2 - 9r^2 + 14pq$
(C) $p^2 + 49q^2 - 9r^2 - 14pq$ (D) $49p^2 + q^2 - 9r^2 - 14pq$

(Logical Reasoning)

17. 'Match' is related to 'Victory' in the same way as 'Examination' is related to:

- (A) Write (B) Appear (C) Success (D) Attempt

18. Ravi travelled 4 km straight towards South. He turned left and travelled 6 km straight, then turned right and travelled 4 km straight. How far is he from the starting point?

- (A) 8 km (B) 10 km (C) 12 km (D) 18 km

19. If in a certain language, GRASP is coded as BMVKN, which word would be coded as CRANE?

- (A) FUDQH (B) HWFSJ (C) GVERI (D) XMVIZ

20. Pointing to a lady, a man said "The son of her only brother is the brother of my wife" how is the lady related to that man?

- (A) Mother's Sister (B) Sister of Father-in-law (C) Maternal Aunt (D) Grandmother