



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

(Concept based)

1. What is the supplement of 115°
(A) 65° (B) 75° (C) 85° (D) 95°
2. For a triangle with length of sides a, b and c, perimeter = _____
(A) $a + b - c$ (B) $a - b - c$ (C) $a + b + c$ (D) $a - b + c$
3. In the class intervals $40 - 50$, $50 - 60$, the number 50 is included in which of the following?
(A) $40-50$ (B) $30-40$ (C) $60-70$ (D) $50-60$
4. Find the mean of $x + 77$, $x + 7$, $x + 5$, $x + 3$ and $x - 2$?
(A) $x - 8$ (B) $x + 18$ (C) $x - 8$ (D) $x - 18$
5. The area of the triangle formed by $2x + 3y - 6$ and the coordinate axes is _____
(A) 3 sq. units (B) 2 sq. units (C) 6 sq. units (D) 5 sq. units

(Application based)

6. In a cylinder, radius of the base is tripled and height is made one-third then the curved surface area will be _____ the area of the original cylinder.
(A) Halved (B) Three times (C) same as (D) Four times
7. A card is drawn from a well shuffled pack of 52 cards, Find the probability of getting a non-face card.
(A) $10/13$ (B) $9/13$ (C) $12/13$ (D) $3/13$
8. How many least numbers of distinct points determine a unique line?
(A) 3 (B) 2 (C) 1 (D) 4
9. Which of the following are solutions of the equation $2x + 3y - 12$?
(A) 3, 2 (B) 2, 3 (C) $\sqrt{2}$, 3 (D) 3, $2/3$
10. Factorise: $p^3(q - r)^3 + q^3(r - p)^3 + r^3(p - q)^3$
(A) $3pqr$ (B) $3pqr(p - q)(q - r)(r - p)$ (C) $p^3 + q^3 + r^3 - 3pqr$ (D) None of these

(HOTS)

11. Which of the following is a linear equation in two variables?
(A) $3x + 2y = 5$ (B) $ax^2 + bx + c = 0$ (C) $px + qy + c = 0$ (D) All of these

12. In two triangles, ABC and PQR, $\angle A = 30^\circ$, $\angle B = 70^\circ$, $\angle P = 70^\circ$, $\angle Q = 80^\circ$ and $AB = RP$, then
(A) $\triangle ABC \cong \triangle PQR$ (B) $\triangle ABC \cong \triangle QRP$ (C) $\triangle ABC \cong \triangle RPQ$ (D) $\triangle ABC \cong \triangle RQP$

13. The lengths of the sides of a triangle are 5 cm, 12 cm and 13 cm. Find the length of perpendicular from the opposite vertex to the side whose length is 13 cm.

(A) $60/13$ cm (B) $30/13$ cm (C) $120/13$ cm (D) 10 cm

14. Which of the following is the factors of the polynomial $p(x) = x^4 + 5x^3 + 9x^2 + 15x + 18$?

(A) $x^2 + 5x + 6$ (B) $x^2 - 5x - 6$ (C) $x^2 + 5x - 6$ (D) $x^2 - 5x - 6$

(Value based)

15. If the perpendicular distance of a point P from the x -axis is 4 units in the negative directions of the y -axis. And the perpendicular distance of P from the y -axis is 5 unit in the positive direction of x -axis, then the coordinates of P are

(A) (-5, -4) (B) (5, -4) (C) (-4, 5) (D) (-4, -5)

16. A triangular park has sides 120 m, 80 m and 50 m. A gardener has to put a fence all around it and also plant grass inside. How much area does he need to plant? Find the cost of fencing it with barbed wire at the rate of Rs. 20 per metre, leaving a space of 3 m wide for a gate on one side.

(A) 115 m (B) 110 m (C) 120 m (D) 125 m

(Logical Reasoning)

17. SCD, TEF, UGH, _____, WKL

(A) CMN (B) UJI (C) VIJ (D) IJT

18. Odometer is to mileage as compass is to _____

(A) speed (B) hiking (C) needle (D) direction

19. Get odd man out:

(A) Parsely (B) Basil (C) dill (D) Mayonnaise

20. Complete the series: 7, 10, 8, 11, 9, 12, _____

(A) 7 (B) 10 (C) 11 (D) 13