



## RAMAGYA SCHOOL, NOIDA

IX/MATHS/2018-19

### OLYMPIAD PRACTICE WORKSHEET

#### (Concept based)

- Express the mixed recurring decimal  $0.3\bar{2}$  in the form of  $\frac{p}{q}$   
(A)  $\frac{8}{25}$       (B)  $\frac{29}{90}$       (C)  $\frac{32}{99}$       (D)  $\frac{32}{199}$
- When  $p(x) = x^3 + ax^2 + 2x + a$  is divided by  $x - a$ , the remainder is \_\_\_\_\_  
(A) 0      (B) a      (C) -a      (D) none of these
- If  $\triangle ABC \cong \triangle BCA$  then  $\triangle ABC$  is isosceles with  
(A)  $AB = AC$       (B)  $AB = BC$       (C)  $AC = BC$       (D) none of these
- The axis on which the points (0, -1) lie, is \_\_\_\_\_  
(A) positive x-axis      (B) negative x-axis      (C) positive y-axis      (D) negative y-axis
- The linear equation  $y = 2x - 3$  cuts the y-axis at \_\_\_\_\_  
(A)  $(\frac{2}{3}, 0)$       (B) (0, 2)      (C)  $(\frac{3}{2}, 0)$       (D) none of these

#### (Application based)

- The measure of an angle is two times the measure of its supplementary angle. Then the angle is \_\_\_\_\_  
(A)  $36^\circ$       (B)  $120^\circ$       (C)  $180^\circ$       (D)  $60^\circ$
- If the angles of a triangle are in the ratio 1 : 2 : 3, then the triangle formed will be  
(A) right angled triangle      (B) isosceles triangle      (C) scalene triangle      (D) obtuse angled triangle
- Which of the following number has a terminating decimal representation?  
(A)  $\frac{7}{12}$       (B)  $\frac{8}{35}$       (C)  $\frac{5}{24}$       (D)  $\frac{13}{80}$
- The base and hypotenuse of a right triangle are respectively 6cm and 10cm long. Its area is  
(A)  $24\text{cm}^2$       (B)  $28\text{cm}^2$       (C)  $48\text{cm}^2$       (D)  $30\text{cm}^2$
- If every side of a triangle is tripled, then increase in the area of triangle is  
(A)  $100\sqrt{2}\%$       (B) 300%      (C) 900%      (D) none of these

#### (Value based)

- The perimeter of a triangle is 300 m and its sides are in the ratio 3 : 5 : 7. Find its area  
(A)  $1500\text{m}^2$       (B)  $9000\text{m}^2$       (C)  $4500\text{m}^2$       (D)  $1500\sqrt{3}\text{m}^2$

12. A rectangular field has an area  $35x^2 + 13x - 12$ . What could be the possible expressions for length and breadth of the field?

- (A)  $5x + 4$  and  $7x - 3$                       (B)  $3x + 9$  and  $7x - 12$     (C) Both (A) and (B)                      (D) None of these

13. The perpendicular distance of the point (8, -7) from the x-axis is \_\_\_\_\_

- (A) 7    (B) 8                      (C) -7                      (D) none of these

14. Which of the following needs a proof?

- (A) an axiom                      (B) a definition                      (C) a postulate                      (D) a theorem

15. A hand fan is made by stitching 5 equal size triangular strips of two different types of paper. The dimensions of equal strips are 25cm, 25cm and 14cm. The total area of paper needed

- (A)  $840\text{cm}^2$                       (B)  $1680\text{cm}^2$                       (C)  $420\text{cm}^2$                       (D)  $7844\text{cm}^2$

### **(Logical Reasoning)**

16. '+' stands for division, '÷' stands for multiplication, 'x' stands for subtraction and '-' stands for addition. Which one of the following equation is correct?

- (A)  $18 \div 6 - 7 + 5 \times 2 = 20$     (B)  $18 + 6 \div 7 \times 5 - 2 = 18$     (C)  $18 \times 6 + 7 \div 5 - 2 = 16$     (D)  $18 \div 6 \times 7 + 5 - 2 = 22$

17. Suman says that father of Ram's father is my father. How is Suman related to Ram?

- (A) Aunt                      (B) Sister                      (C) Mother                      (D) Bua (Father's Sister)

18. Complete the given series 4, 9, 13, 22, 35.....

- (A) 57                      (B) 70                      (C) 63                      (D) 75

19. If the alphabet series is written in the reverse order, which letter will be 5<sup>th</sup> to the left of the 14<sup>th</sup> letter from the left?

- (A) R                      (B) I                      (C) S                      (D) V

20. Complete the pattern. 6, 11, 21, 36, 56, (...?...)

- (A) 42                      (B) 51                      (C) 81                      (D) 91