



## RAMAGYA SCHOOL, NOIDA

IX/MATHS/2018-19

### OLYMPIAD PRACTICE WORKSHEET

#### (Concept based)

1. A triangular park in a city has dimensioned 100m x 90m x 110m. A contract is given to a company for planting grass in the park at the rate of Rs. 4000 per hectare. What is the amount to be paid to the company ?  
(One hectare = 10000 m<sup>2</sup>)  
(A) Rs. 1,968.60    (B) Rs. 1,698.60    (C) Rs. 1,986.60    (D) Rs. 1,696.80
2. If  $\triangle ABC \cong \triangle LKM$ , then side of  $\triangle LKM$  equal to side AC of  $\triangle ABC$  is  
(A) LK    (B) KM    (C) LM    (D) None of these
3. If  $\triangle ABC \cong \triangle ACB$  then  $\triangle ABC$  is isosceles with  
(A) AB = AC    (B) AB = BC    (C) AC = BC    (D) none of these
4. In triangles ABC and PQR, if  $\angle A = \angle R$ ,  $\angle B = \angle P$  and AB = RP, then which one of the following congruence conditions applies:  
(A) SAS    (B) ASA    (C) SSS    (D) RHS
5. The sides of a triangle are 16cm, 30cm and 34cm. Its area is  
(A) 225cm<sup>2</sup>    (B) 225 $\sqrt{3}$ cm<sup>2</sup>    (C) 225 $\sqrt{2}$ cm<sup>2</sup>    (D) 450cm<sup>2</sup>

#### (Application based)

6. D, E, F are the midpoints of the sides BC, CA and AB respectively of triangle ABC. Then triangle DEF is congruent to triangle  
(A) ABC    (B) AEF    (C) BFD, CDE    (D) AFE, BFD, CDE
7. In  $\triangle ABC$  if AB = AC and BC is produced to D such that  $\angle ACD = 100^\circ$ , then  $\angle A =$   
(A) 20°    (B) 40°    (C) 60°    (D) 80°
8. If the area of an isosceles triangle is 8cm, what is the perimeter of the triangle?  
(A)  $8 + \sqrt{2}$ cm<sup>2</sup>    (B)  $8 + 4\sqrt{2}$ cm<sup>2</sup>    (C)  $4 + 8\sqrt{2}$ cm<sup>2</sup>    (D)  $12\sqrt{2}$ cm<sup>2</sup>
9. The abse and hypotenuse of a right triangle are respectively 5cm and 13cm long. Its area is  
(A) 25cm<sup>2</sup>    (B) 28cm<sup>2</sup>    (C) 30cm<sup>2</sup>    (D) 40cm<sup>2</sup>
10. If every side of a triangle is doubled, then increase in the area of triangle is  
(A) 100 $\sqrt{2}$ %    (B) 200%    (C) 300%    (D) 400%

#### (Value based)

11. The perimeter of a triangle is 540m and its sides are in the ratio 25 : 17 : 12. Find its area  
(A) 9100m<sup>2</sup> (B) 9000m<sup>2</sup> (C) 9200m<sup>2</sup> (D) 9500m<sup>2</sup>

12. A rhombus shaped sheet with perimeter 40cm and one diagonal 12cm is painted on both sides at the rate of Rs. 5 per cm<sup>2</sup>. Find the cost of painting.  
(A) Rs. 880 (B) Rs. 1020 (C) Rs. 960 (D) Rs. 980

13. An umbrella is made by stitching 12 triangular pieces of cloth of two different colors. Each piece measuring 40cm, 40cm and 18cm. How much cloth of each color is required for the umbrella?  
(A) 2104.56cm<sup>2</sup>, 2104.56 cm<sup>2</sup> (B) 4209.22cm<sup>2</sup>, 2104.56 cm<sup>2</sup>  
(C) 1204.61cm<sup>2</sup>, 1204.61cm<sup>2</sup> (D) 2014.61cm<sup>2</sup>, 1204.61cm<sup>2</sup>

14. The perimeter of a field in the form of an equilateral triangle is 36cm then its area is given by  
(A) 98√3cm<sup>2</sup> (B) 8√3cm<sup>2</sup> (C) 42√3cm<sup>2</sup> (D) 36√3cm<sup>2</sup>

15. A hand fan is made by stitching 10 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) 840cm<sup>2</sup> (B) 1680cm<sup>2</sup> (C) 480cm<sup>2</sup> (D) 7844cm<sup>2</sup>

### **Logical Reasoning**

16. A number series is given with one term missing. Choose the correct option that will continue the same pattern. (2, 3), (3, 5), (5, 7), (7, 11), (11, 13), (...)  
(A) (13, 15) (B) (15, 16) (C) (13, 17) (D) (13, 26)

17. In a certain code, EXPLAINING is written as PXEALNIGNI. How is PRODUCTION written in that code?  
(A) ORPUDTINOC (B) ROPUDTIONC (C) ORPUBTCNOI (D) ORPUBTCNIO

18. Which of the following options shows the correct mirror image of the given combination of letters and numbers, if the mirror is placed vertically to the left? A 2 N 6 Z 8 W 9  
(A) 2N6 A Z 9 8 W (B) A 2 N 9 6Z8W (C) N A 2 Z 6 9 8 W (D) 9 2N6Z8W A

19. In the following series, how many 5's are there which are immediately preceded by 9 and followed by 6? 9 6 9 5 8 4 3 2 9 5 6 2 3 5 9 8 7 6 5 9 4 5 6 1  
(A) 0 (B) 1 (C) 2 (D) 3

20. Complete the pattern. 6, 11, 21, 36, 56, (...?...)  
(A) 42 (B) 51 (C) 81 (D) 91