

1. Two angles of a triangle measure  $15^\circ$  and  $85^\circ$ . What is the measure for the third angle?

- A.  $50^\circ$
- B.  $55^\circ$
- C.  $60^\circ$
- D.  $80^\circ$

2. You are lying 120 ft away from a tree that is 50 feet tall. You look up at the top of the tree. Approximately how far is your hear from the top of the tree in a straight line?

- A. 50 feet
- B. 75 feet
- C. 120 feet
- D. 130 feet

3. A cyclist bikes  $x$  distance at 10 miles per hour and returns over the same path at 8 miles per hour. What is the cyclist's average rate for the round trip in miles per hour?

- A. 8.1
- B. 8.3
- C. 8.6
- D. 8.9

4. Two angle in a triangle equal  $120^\circ$ . What is the measure of the third angle?

- A.  $60^\circ$
- B.  $70^\circ$
- C.  $80^\circ$
- D.  $90^\circ$

5. The radius of the in circle of a triangle whose sides are 18,24,30 is ?

- A. 2
- B. 4
- C. 6
- D. 9

6. The surface area of the three coterminous faces of a cuboid are 6, 15, 10 sq.cm respectively. Find the volume of the cuboid.

- A. 30
- B. 20
- C. 40
- D. 35

7. The area of the triangle whose vertices are  $(a,a)$  ,  $(a+1,a+1)$  and  $(a+2,a)$  is :

- A. cube of a
- B. 1
- C. 2a
- D. 1.414

8. What is the value of each angle of an equilateral triangle?

- A. 60 degree
- B. 90 degree
- C. 120 degree
- D. 180 degree

9. The lines  $(x - 2) / 1 = (y - 3) / 1 = (z - 4) / -k$  and  $(x - 1) / k = (y - 4) / 2 = (z - 5) / 1$  are coplanar if

- A.  $k = 1$  or  $-1$
- B.  $k = 0$  or  $-3$
- C.  $k = 3$  or  $-3$
- D.  $k = 0$  or  $-1$

10. A cube and a rectangular solid are equal in volume. If the lengths of the edges of the rectangular solid are 4, 8, and 16, what is the length of an edge of the cube?

- A. 4
- B. 8
- C. 12
- D. 16

11. How many whole such blocks?

The size of a wooden block is  $5 * 10 * 20$  cm<sup>3</sup>. How many whole such blocks you will take to construct a solid wooden cube of minimum size?

- A. 6
- D. 8
- C. 12

D. 16

12. An Intersection C is a circle and P is a point exterior to it. Several lines are drawn through P such that each line has nonempty intersection with C. If 2005 points of intersection are formed, then among the lines

- A. There may be two tangents
- B. There may be three tangents
- C. There has to be precisely one tangent
- D. None of these

13. If a circle has the diameter of 8, what is the circumference?

- A. 6.28
- B. 12.56
- C. 25.13
- D. 50.24

14. Of a triangle each measure  $70^\circ$ . What is the measure of the third angle in degrees?

- A.  $40^\circ$
- B.  $80^\circ$
- C.  $100^\circ$
- D.  $120^\circ$

15. In triangle ABC,  $AB=BC$  and (C's measure is  $65^\circ$ .) What is the measure of angle B?

- A.  $40^\circ$
- B.  $50^\circ$
- C.  $60^\circ$
- D.  $65^\circ$

16. The perpendicular bisector of the line segment joining P (1, 4) and Q (k, 3) has y-intercept  $-4$ . Then a possible value of k is

- A. 1
- B. -4
- C. 3
- D. 2