2ND REVISION MODEL 2

10th Standard

Maths

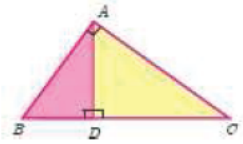
Exam Time : 03:00:00 Hrs | Total Marks : 100

ANSWER ALL | 14 x 1 = 14

1) if △ABC, DE||BC, AB=3.6cm, AC=24 cm and AD=2.1 cm then the length of AE is
   (a) 1.4 cm (b) 1.8 cm (c) 1.2 cm (d) 1.05 cm

2) In a △ABC, AD is the bisector ∠BAC.If AB=5cm and DC=8cm. The length of the side AC is
   (a) 6 cm (b) 4 cm (c) 3 cm (d) 8 cm

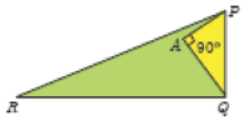
3) In the adjacent figure $\angle BAC$=90° nd AD⊥BC then



   (a) BD-CD=BC^2 (b) AB.AC=BC^2 (c) BD.CD=AD^2 (d) AB-AC=AD^3

4) Two poles of heights 6 m and 11 m stand vertically on a plane ground. If the distance between their feet is 12 m, what is the distance between their tops?
   (a) 13 m (b) 14 m (c) 15 m (d) 12.8 m

5) In the given figure PR=26 cm, QR=24cm,$\angle PAQ$ =90°, PA==6cm and QA=8 cm Find ∠PQR



   (a) 80° (b) 85° (c) 75° (d) 90°

6) A straight line has equation 8y = 4x + 21. Which of the following is true
   (a) The slope is 0.5 and the y intercept is 2.6
   (b) The slope is 5 and the y intercept is 1.6
   (c) The slope is 0.5 and the y intercept is 1.6
   (d) The slope is 5 and the y intercept is 2.6

7) When proving that a quadrilateral is a trapezium, it is necessary to show
   (a) Two sides are parallel. (b) Two parallel and two non-parallel sides.
   (c) Opposite sides are parallel. (d) All sides are of equal length.

8) When proving that a quadrilateral is a parallelogram by using slopes you must find
   (a) The slopes of two sides (b) The slopes of two pair of opposite sides
   (c) The lengths of all sides (d) Both the lengths and slopes of two sides

9) (2, 1) is the point of intersection of two lines.
   (a) x - y - 3 = 0; 3 x - y - 7 = 0 (b) x + y = 3; 3x + y =7
   (c) 3x + y =3; x + y = 7 (d) x + 3y - 3 = 0; x - y - 7 = 0

10) The area of triangle formed by the points (−5, 0), (0, −5) and (5, 0) is
   (a) 0 sq.units (b) 25 sq.units (c) 5 sq.units (d) none of these

11) Two persons are standing 'x' metres apart from each other and the height of the first person is double that of the other. If from the middle point of the line joining their feet an observer finds the angular elevations of their tops to be complementary, then the height of the shorter person (in metres) is

(a) $\sqrt{2}$ x (b) $\frac{x}{2\sqrt{2}}$ (c) $\frac{x}{\sqrt{2}}$ (d) 2x

12) The angle of elevation of a cloud from a point h metres above a lake is β. The angle of depression of its reflection in the lake is 45°. The height of location of the cloud from the lake is

(a) $\frac{h(1+tan\beta)}{1-tan\beta}$ (b) $\frac{h(1-tan\beta)}{1+tan\beta}$ (c) h tan(45°-β) (d) none of these

13) The angle of elevation of the top of tree from a point at a distance of 250m from its base is 60°. The height of tree is :

(a) 250 m (b) $250\sqrt{3}$ (c) $\frac{250}{3}m$ (d) $200\sqrt{3}$

14) The angle of depression of a boat from a $50\sqrt{3}$ m high bridge is °.The horizontal distance of the boat from the bridge is:

(a) 150m (b) $150\sqrt{3}$ (c) 60m (d) $60\sqrt{3}$

ANSWER 10 10 x 2 = 20

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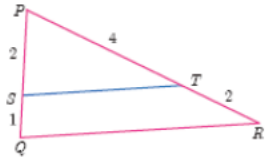
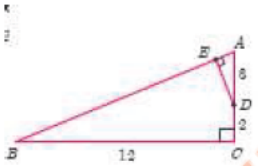
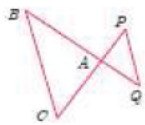
15) Show that △ PST~△ PQR



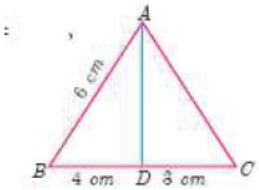
16) In the adjacent figure, △ABCis right angled at C and DE⊥ AB. Prove that △ABC~△ADE and hence find the lengths of AE and DE.



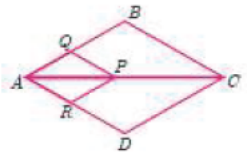
17) In the adjacent figure, △ ACB~△ APQ.If BC = 8 cm, PQ = 4 cm, BA = 6.5 cm and AP = 2.8 cm, find CA and AQ.



18) In the figure, AD is the bisector of ∠A. If BD = 4 cm, DC= 3 cm and AB= 6 cm, find AC.



19) In fig. if PQ||BCandPR||CD prove that



$\frac{AB}{AD} = \frac{AQ}{AB}$

20) Calculate the slope and y intercept of the straight line 8x − 7y + 6=0

21) Find the equation of a line passing through the point (3, - 4) and having slope $\frac{-5}{7}$

22) Find the equation of a line passing through the point A(1,4) and perpendicular to the line joining points (2, 5) and (4, 7).

23) Find the equation of a straight line passing through (5, - 3) and (7, - 4).

24) The horizontal distance between two buildings is 70 m. The angle of depression of the top of the first building when seen from the top of the second building is 45°. If the height of the second building is 120 m, find the height of the first building.

25) A player sitting on the top of a tower of height 20 m observes the angle of depression of a ball lying on the ground as 60° . Find the distance between the foot of the tower and the ball.($\sqrt{3}$ =1.732)

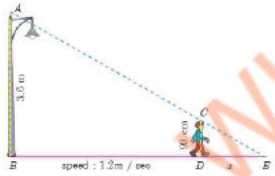
26) The horizontal distance between two buildings is 140 m. The angle of depression of the top of the first building when seen from the top of the second building is 30° . If the height of the first building is 60 m, find the height of the second building.($\sqrt{3}$ = 1.732)

27) Find the slope of the following straight lines $7x - \frac{3}{17} = 0$

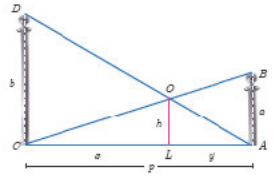
28) A ladder 15 metres long just reaches the top of a vertical wall. If the ladder makes an angle of 60° with the wall, finf the height of the wall.

ANSWER 10 10 x 5 = 50

29) A boy of height 90cm is walking away from the base of a lamp post at a speed of 1.2m/sec. If the lamppost is 3.6m above the ground, find the length of his shadow cast after 4 seconds.



30) Two poles of height ‘a’ metres and ‘b’ metres are ‘p’ metres apart. Prove that the height of the point of intersection of the lines joining the top of each pole to the foot of the opposite pole is given by $\frac{ab}{a+b}$ meters

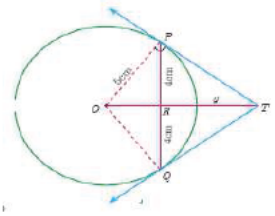


31) Show that the given points form a parallelogram : A(2.5, 3.5) , B(10, - 4), C(2.5, -2.5) and D(-5, 5)

32) If the points A(2, 2), B(–2, –3), C(1, –3) and D(x, y) form a parallelogram then find the value of x and y.

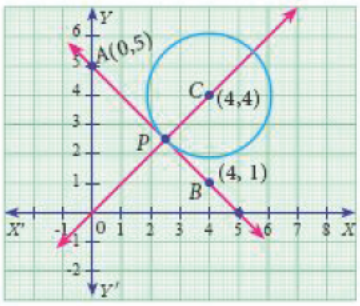
33) In the adjacent figure, ABC is a right angled triangle with right angle at B and points D, E trisect BC. Prove that $8AE^2=3AC^2+5AD^2$

34) PQ is a chord of length 8 cm to a circle of radius 5 cm. The tangents at P and Q intersect at a point T. Find the length of the tangent TP.



35) Find the equation of a straight line Passing through (1, 4) and has intercepts which are in the ratio 2:5

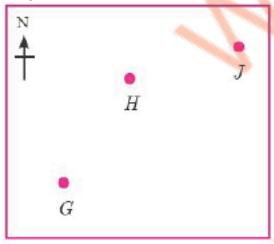
36) The line joining the points A(0,5) and B(4,1) is a tangent to a circle whose centre C is at the point (4,4)
Find the equation of the line AB.



37) A tv tower stands vertically on a bank of a canal. thw tower is watched from a point on the other bank directly opposite to it.the angel of elevation of the top of the tower is 58°. from another point 20m away from this point on the line joining this point of the tower,the angel of elevation of the top of the tower is 30°.find the height of the tower and the width of the canal.(tan58°=1.6003)

38) An Aeroplane sets of from G on bearing of 24° towards H, a point 250 kmaway, at H it changes course and heads towards J on a bearing of 55° and a distance 0f 180 km away.
How far is H to the north of G?,

$$\begin{pmatrix} sin24^\circ = 0.4067 & sin11^\circ = 0.1908 \\ cos24^\circ = 0.9135 & cos11^\circ = 0.9816 \end{pmatrix}$$



39) Two trees are standing on the flat ground.the angel of elevation of the top of both the trees from a point x on the ground is 40° .if the horizontal distance between x and the smaller tree is 8m and the distance of the top of the trees is 20m, calculate, the distance between the point x and the top of the smaller tree.

40) The area of a triangle is 5 sq.units. Two of its vertices are (2,1) and (3, –2). The third vertex is (x, y) where y = x + 3. Find the coordinates of the third vertex.

41) To a man standing outside his house, the angles of elevation of the top and bottom of a window are 60° and 45° respectively. If the height of the man is 180

cm and if he is 5 m away from the wall, what is the height of the window?($\sqrt{3}$ = 1.732)

42) Angle Bisector Theorem?

ANSWER ALL 2 x 8 = 16

43) a) Construct a △PQR such that QR = 6.5 cm, ∠P=60^o and the altitude from P to QR is of length 4.5 cm.

(OR)

b) Construct a △ABC such that AB = 5.5 cm, ∠C=25^o and the altitude from C to AB is 4 cm.

44) a) Draw a circle of diameter 6 cm from a point P, which is 8 cm away from its centre. Draw the two tangents PA and PB to the circle and measure their lengths.

(OR)

b) Draw a tangent at any point R on the circle of radius 3.4 cm and centre at P ?

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