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WHATSAPP - 8056206308

2ND REVISION MODEL 3

10th Standard

Maths

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RAVI MATHS TUITION CENTER

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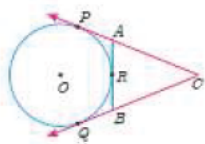
Exam Time : 03:00:00 Hrs

Total Marks : 100

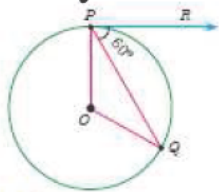
ANSWER ALL

14 x 1 = 14

- 1) A tangent is perpendicular to the radius at the
(a) centre (b) point of contact (c) infinity (d) chord
- 2) How many tangents can be drawn to the circle from an exterior point?
(a) one (b) two (c) infinite (d) zero
- 3) The two tangents from an external points P to a circle with centre at O are PA and PB. If $\angle APB = 70^\circ$ then the value of $\angle AOB$ is
(a) 100° (b) 110° (c) 120° (d) 130°
- 4) In figure CP and CQ are tangents to a circle with centre at O. ARB is another tangent touching the circle at R. If CP = 11 cm and BC = 7 cm, then the length of BR is



- (a) 6 cm (b) 5 cm (c) 8 cm (d) 4 cm
- 5) In figure if PR is tangent to the circle at P and O is the centre of the circle, then $\angle PQR$ is



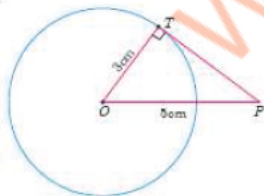
- (a) 120° (b) 100° (c) 110° (d) 90°
- 6) Consider four straight lines
(i) $l_1 : 3y = 4x + 5$
(ii) $l_2 : 4y = 3x - 1$
(iii) $l_3 : 4y + 3x = 7$
(iv) $l_4 : 4x + 3y = 2$
Which of the following statement is true?
(a) l_1 and l_2 are perpendicular (b) l_1 and l_4 are parallel
(c) l_2 and l_4 are perpendicular (d) l_2 and l_3 are parallel
- 7) 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
- 8) 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.
- 9) 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
- 10) (2, 1) is the point of intersection of two lines.
 (a) $x - y - 3 = 0$; $3x - y - 7 = 0$ (b) $x + y = 3$; $3x + y = 7$
 (c) $3x + y = 3$; $x + y = 7$ (d) $x + 3y - 3 = 0$; $x - y - 7 = 0$
- 11) If the altitude of the sun is at 60° , then the height of the vertical tower that will cast a shadow of length 30 m is
 (a) $30\sqrt{3}m$ (b) 15 m (c) $\frac{30}{\sqrt{3}}m$ (d) $15\sqrt{2}m$
- 12) The angle of elevation and depression are usually measured by a device called
 (a) Theodolite (b) Kaleidoscope (c) Periscope (d) Telescope
- 13) A tower subtends an angle 30° at a point on the same level as its foot. At a second point h metres above the first the depression of the foot of the tower is 60° . The height of the tower is
 (a) $\frac{h}{2}m$ (b) $\sqrt{3}hm$ (c) $\frac{h}{3}m$ (d) $\frac{h}{\sqrt{3}}m$
- 14) If the altitude of the light house is h metres and from it the angle of depression of two ships on opposite sides of the light house are observed to be 30° and 45° , then the distance between the ships are
 (a) $(\sqrt{3} + 1)h$ metres (b) $(\sqrt{3} - 1)h$ metres (c) $(\sqrt{3}h)$ metres
 (d) $1 + \left(1 + \frac{1}{\sqrt{3}}\right)h$ metres

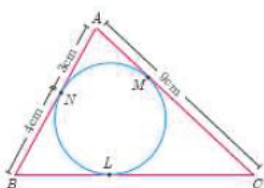
ANSWER 10

10 x 2 = 20

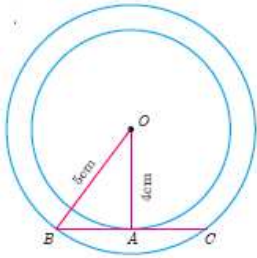
- 15) Find the length of the tangent drawn from a point whose distance from the centre of a circle is 5 cm and radius of the circle is 3 cm.



- 16) In Fig, $\triangle ABC$ is circumscribing a circle. Find the length of BC.



- 17) If radii of two concentric circles are 4 cm and 5 cm then find the length of the chord of one circle which is a tangent to the other circle



- 18) Find the equation of a line whose inclination is 30° and making an intercept - 3 on the Y axis.
- 19) Find the slope and y intercept of $\sqrt{3}x + (1 - \sqrt{3})y = 3$
- 20) The length of the tangent to a circle from a point P, which is 25 cm away from the centre is 24 cm. What is the radius of the circle?
- 21) Two circles with centres O and O' of radii 3 cm and 4 cm, respectively intersect at two points P and Q, such that OP and O'P are tangents to the two circles. Find the length of the common chord PQ.
- 22) Determine whether the sets of points are collinear? (a, b + c), (b, c + a) and (c, a + b)
- 23) Check whether AD is bisector $\angle A$ of $\triangle ABC$ in each of the following AB=4cm, AC=6cm, BD=1.6cm and CD=2.4cm.
- 24) Find the intercepts made by the following lines on the coordinate axes. $4x + 3y + 12 = 0$
- 25) A kite is flying at a height of 60 m above the ground. The inclination of the string with the ground where its string is tied is 60° . Find the length of the string.
- 26) The angle between the top of a building and a point 80 m away from the base on level ground is 60° . How tall is the building?
- 27) The angle of depression of a vehicle on the ground from the top of a tower is 60° . If the vehicle is at a distance of 100 m away from the building, find, the height of the tower.
- 28) From the top of a fire tower, a forest ranger sees his partner on the ground at an angle of depression of 45° . If the tower is 45 feet in height, how far is the partner from the base of the tower?

ANSWER 10

$10 \times 5 = 50$

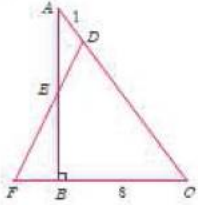
ANSWERS AVAILABLE IN MY YOUTUBE

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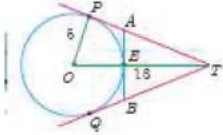
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- 29) Let P(11, 7), Q(13.5, 4) and R(9.5, 4) be the midpoints of the sides AB, BC and AC respectively of $\triangle ABC$. Find the coordinates of the vertices A, B and C. Hence find the area of $\triangle ABC$ and compare this with area of $\triangle PQR$.
- 30) Let A(3, - 4), B(9, - 4), C(5, - 7) and D(7, - 7). Show that ABCD is a trapezium.
- 31) In Fig, ABC is a triangle with $\angle B=90^\circ$, BC=3cm and AB=4 cm. D is point on AC such that AD=1 cm and E is the midpoint of AB. Join D and E and extend DE to

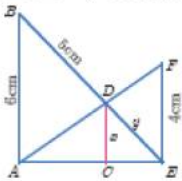
meet CB at F. Find BF.



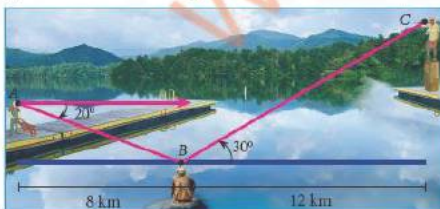
- 32) In figure, O is the centre of the circle with radius 5 cm. T is a point such that $OT = 13$ cm and OT intersects the circle E, if AB is the tangent to the circle at E, find the length of AB



- 33) In the given figure $AB \parallel CD \parallel EF$. If $AB = 6$ cm, $CD = x$ cm, $EF = 4$ cm, $BD = 5$ cm and $DE = y$ cm. Find x and y



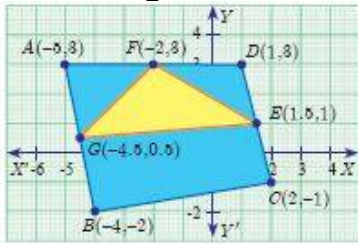
- 34) Two trains leave a railway station at the same time. The first train travels due west and the second train due north. The first train travels at a speed of 20 km/hr and the second train travels at 30 km/hr. After 2 hours, what is the distance between them?
- 35) Find the equations of the lines, whose sum and product of intercepts are 1 and -6 respectively.
- 36) The angles of elevation and depression of the top and bottom of a lamp post from the top of a 66 m high apartment are 60° and 30° respectively. Find the height of the lamp post.
- 37) Three villagers A, B and C can see each other across a valley. The horizontal distance between A and B is 8 km and the horizontal distance between B and C is 12 km. The angle of depression of B from A is 20° and the angle of elevation of C from B is 30° . Calculate : the vertical height between A and B. ($\tan 20^\circ = 0.3640$, ($\sqrt{3} = 1.732$)



- 38) An aeroplane is flying parallel to the Earth's surface at a speed of 175 m/sec and at a height of 600 m. The angle of elevation of the aeroplane from a point on the Earth's surface is 37° at a given point. After what period of time does the angle of elevation increase to 53° ? ($\tan 53^\circ = 1.3270$, $\tan 37^\circ = 0.7536$)
- 39) A man is watching a boat speeding away from the top of a tower. The boat makes an angle of depression of 60° with the man's eye when at a distance of 200 m from the tower. After 10 seconds, the angle of depression becomes 45° . What is

the approximate speed of the boat (in km / hr), assuming that it is sailing in still water? ($\sqrt{3} = 1.732$)

40) In the figure, find the area of quadrilateral BCEG.



41) Find the equation of a straight line Passing through $(-8, 4)$ and making equal intercepts on the coordinate axes

42) State and prove pythagoras theorem?

ANSWER ALL

$$2 \times 8 = 16$$

43) a) Draw the two tangents from a point which is 10 cm away from the centre of a circle of radius 5 cm. Also, measure the lengths of the tangents.

(OR)

b) Take a point which is 11 cm away from the centre of a circle of radius 4 cm and draw the two tangents to the circle from that point.

44) a) Construct a triangle similar to a given triangle ABC with its sides equal to $\frac{6}{5}$ of the corresponding sides of the triangle ABC (scale factor $\frac{6}{5} > 1$).

(OR)

b) Draw a triangle ABC of base BC = 5.6 cm, $\angle A = 40^\circ$ and the bisector of $\angle A$ meets BC at D such that CD = 4 cm.

CHAPTERWISE TEST PAPERS AVAILABLE . WHATSAPP - 8056206308
