

RAVI MATHS TUITION CENTER, CHENNAI – 82. PH - 8056206308

Geometry FULL

10th Standard

Maths

Reg.No. :

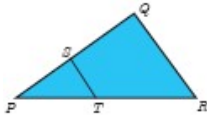
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Exam Time : 03:00:00 Hrs

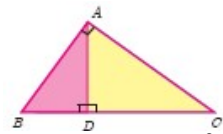
Total Marks : 1

15 x 1 =

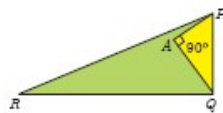
- 1) If in triangles ABC and EDF, $\frac{AB}{DE} = \frac{BC}{FD}$ then they will be similar, when
 (a) $\angle B = \angle E$ (b) $\angle A = \angle D$ (c) $\angle B = \angle D$ (d) $\angle A = \angle F$
- 2) In $\angle LMN$, $\angle L = 60^\circ$, $\angle M = 50^\circ$. If $\triangle LMN \sim \triangle PQR$ then the value of $\angle R$ is
 (a) 40° (b) 70° (c) 30° (d) 110°
- 3) If $\triangle ABC$ is an isosceles triangle with $\angle C = 90^\circ$ and $AC = 5$ cm, then AB is
 (a) 2.5 cm (b) 5 cm (c) 10 cm (d) $5\sqrt{2}$ cm
- 4) In a given figure $ST \parallel QR$, $PS = 2$ cm and $SQ = 3$ cm.
 Then the ratio of the area of $\triangle PQR$ to the area $\triangle PST$ is



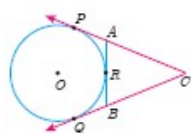
- (a) 25 : 4 (b) 25 : 7 (c) 25 : 11 (d) 25 : 13
- 5) The perimeters of two similar triangles $\triangle ABC$ and $\triangle PQR$ are 36 cm and 24 cm respectively. If $PQ = 1$ cm, then the length of AB is
 (a) $\frac{2}{3}$ (b) $\frac{10\sqrt{3}}{3}$ cm (c) $60\frac{2}{3}$ cm (d) 15 cm
- 6) if $\triangle ABC$, $DE \parallel BC$, $AB = 3.6$ cm, $AC = 24$ 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
- 7) In a $\triangle ABC$, AD is the bisector $\angle BAC$. If $AB = 5$ cm and $DC = 8$ cm. The length of the side AC is
 (a) 6 cm (b) 4 cm (c) 3 cm (d) 8 cm
- 8) In the adjacent figure $\angle BAC = 90^\circ$ and $AD \perp BC$ then



- (a) $BD \cdot CD = BC^2$ (b) $AB \cdot AC = BC^2$ (c) $BD \cdot CD = AD^2$ (d) $AB \cdot AC = AD^3$
- 9) Two poles of heights 6 m and 11 m stand vertically on a plane ground. If the distance between their feet 12 m, what is the distance between their tops?
 (a) 13 m (b) 14 m (c) 15 m (d) 12.8 m
- 10) In the given figure $PR = 26$ cm, $QR = 24$ cm, $\angle PAQ = 90^\circ$, $PA = 6$ cm and $QA = 8$ cm Find $\angle PQR$



- (a) 80° (b) 85° (c) 75° (d) 90°
- 11) A tangent is perpendicular to the radius at the
 (a) centre (b) point of contact (c) infinity (d) chord
- 12) How many tangents can be drawn to the circle from an exterior point?
 (a) one (b) two (c) infinite (d) zero
- 13) 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°
- 14) 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



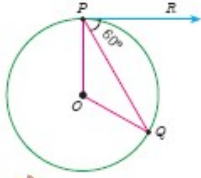
(a) 6 cm

(b) 5 cm

(c) 8 cm

(d) 4 cm

15) 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°

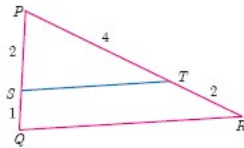
(b) 100°

(c) 110°

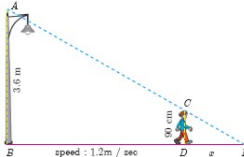
(d) 90°

5 x 2 =

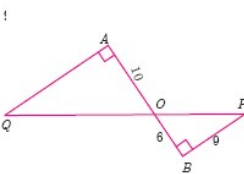
16) Show that $\triangle PST \sim \triangle PQR$



17) 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.

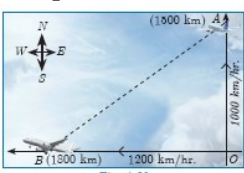


18) QA and PB are perpendiculars to AB. If AO = 10 cm, BO = 6 cm and PB = 9 cm. Find AQ.



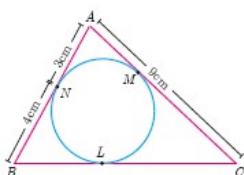
19) If $\triangle ABC$ is similar to $\triangle DEF$ such that $BC = 3$ cm, $EF = 4$ cm and area of $\triangle ABC = 54$ cm². Find the area of $\triangle DEF$.

20) An Aeroplane leaves an airport and flies due north at a speed of 1000 km/hr. At the same time, another aeroplane leaves the same airport and flies due west at a speed of 1200 km/hr. How far apart will be the two planes after $1\frac{1}{2}$ hours?



15 x 5 =

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



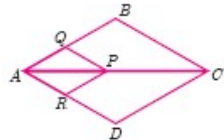
22) A girl looks the reflection of the top of the lamp post on the mirror which is 66 m away from the foot of the lamppost. The girl whose height is 12.5 m is standing 2.5 m away from the mirror. Assuming the mirror is placed on the ground facing the sky and the girl, mirror and the lamppost are in a same line, find the height of the lamp post.

23)

Construct a triangle similar to a given triangle PQR with its sides equal to $\frac{2}{3}$ of the corresponding sides of the triangle PQR (scale factor $\frac{2}{3}$).

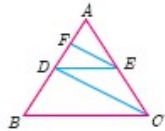
- 24) Construct a triangle similar to a given triangle ABC with its sides equal to $\frac{6}{5}$ of the corresponding sides of the triangle ABC (scale factor $\frac{6}{5}$).

- 25) In fig. if $PQ \parallel BC$ and $PR \parallel CD$ prove that

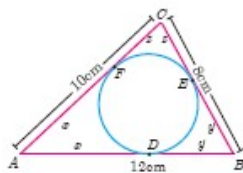


$$\frac{AB}{AD} = \frac{AQ}{AB}$$

- 26) In figure $DE \parallel BC$ and $CD \parallel BE$. Prove that $AD^2 = AB \times AF$



- 27) Construct a $\triangle PQR$ which the base $PQ = 4.5$ cm, $\angle R = 35^\circ$ and the median from R to PQ is 6 cm.
- 28) Construct a $\triangle PQR$ such that $QR = 6.5$ cm, $\angle P = 60^\circ$ and the altitude from P to QR is of length 4.5 cm.
- 29) 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.
- 30) In the adjacent figure, ABC is a right angled triangle with right angle at B and points D, E trisect BC. Prove that $8AE^2 = 3AC^2 + 5AD^2$
- 31) A circle is inscribed in $\triangle ABC$ having sides 8 cm, 10 cm and 12 cm as shown in figure, Find AD, BE and CF.



- 32) Draw a circle of radius 4.5 cm. Take a point on the circle. Draw the tangent at that point using the alternate segment theorem.
- 33) 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.
- 34) D is the mid point of side BC and $AE \perp BC$. If $BC = a$, $AC = b$, $AB = c$, $ED = x$, $AD = p$ and $AE = h$, prove that
- $$b^2 + c^2 = 2p^2 + \frac{a^2}{2}$$
- 35) In $\triangle ABC$, D and E are points on the sides AB and AC respectively such that $DE \parallel BC$. If $AD = 8x - 7$, $DB = 5x - 3$, $AE = 4x - 3$, and $EC = 3x$, find the value of x.
