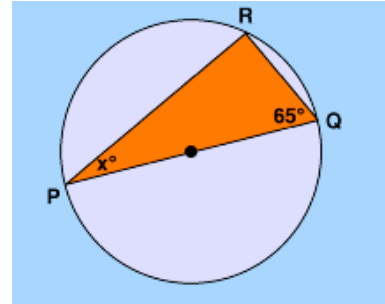
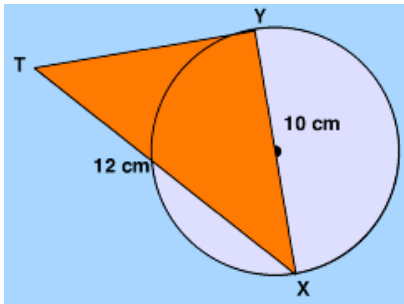


Test: Circle Geometry

1. In the diagram, PQ is a diameter of the circle. What is the value of x ?



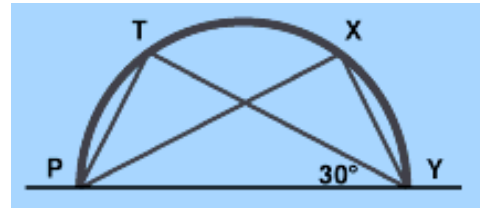
$x =$ _____



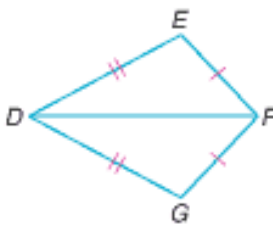
2. In the diagram, TY is a tangent to the circle and XY is a diameter. Calculate the length of TY to one decimal place.

TY = _____

3. The diagram shows a metal structure supporting a semi-circular bridge. What is the size of the angle TPY? State all assumptions or properties you used to help you solve the problem.



$\angle TPY =$ _____



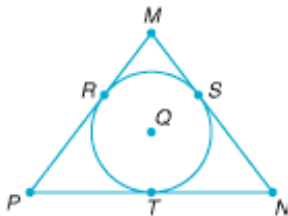
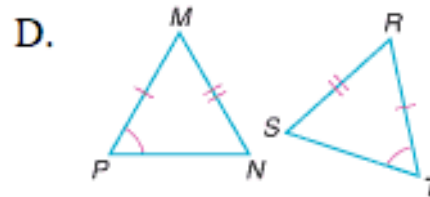
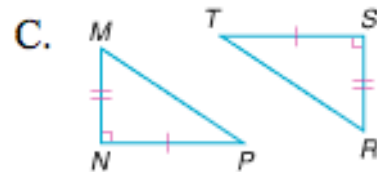
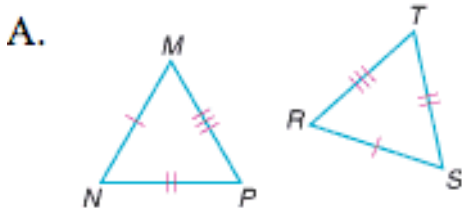
4. Which postulate would prove these triangles to be congruent?

5. Find the value of x .



$x =$ _____

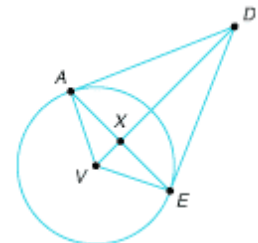
6. Which pair of triangles shows $\triangle MNP \cong \triangle RST$ by the AAS Theorem?



7. $\triangle MNP$ is circumscribed about the circle. If the perimeter of $\triangle MNP$ is 30, $MR=4$ and $SN=6$, find PT .

$PT =$ _____

8. In the figure, AD and ED are tangential to the circle. X is the midpoint of AE . If the radius of the circle is 5, $AE=8$ and $XD = \frac{16}{3}$, find AD .



$AD =$ _____

9. A chord is 16.0 cm from the centre of a circle whose radius is 10.0 cm. How long is the chord?

Chord = _____

10. The domed roof of a sports complex is semi-circular in the cross-sectional shape. Its diameter is 80.0 m. No part of the steel beams used to support the roof is more than 1.0 m away from the roof. How long are the beams? PG221

Beams= _____

11. Write the equation for the circle using the information given:

A. Centre (10, -1) and a radius of 10

B. Endpoints of a diameter of the circle are P(-2, 5) and Q (4, 9)

12. Write the transformational equation for an ellipse with

A. Centre (-3, 2) a horizontal axis of 10 and a vertical axis of 12

B. Centre at the origin and crosses at (0,3) and (7,0)

13. For each ellipse, state the centre and the lengths of the major and minor axes.

A. $[2(x - 3)]^2 + [\frac{1}{3}(y + 4)]^2 = 1$ Centre: _____

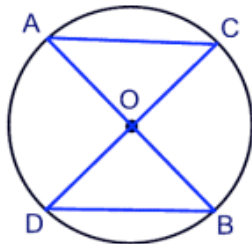
Major Axis: _____ Minor Axis: _____

B. $[\frac{1}{7}(x - 5)]^2 + [\frac{1}{6}(y + 2)]^2 = 1$ Centre: _____

Major Axis: _____ Minor Axis: _____

14. Given that PQ is tangent to two circles at W and X, as shown.

PR is tangent to the circles at Y and Z, as shown. Prove $WX \cong YZ$. **PG288 EX 10**



15. Given diameters AB and CD, prove that the arc AC is congruent to arc BD.

16. Given AC is tangential to circle O at A and to circle P at C, prove $\angle BOA \cong \angle BPC$.

