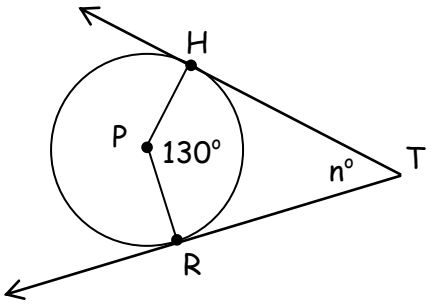
Tangents

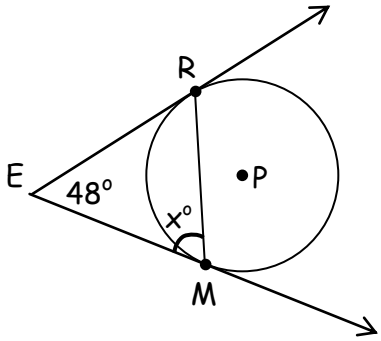
Worksheet

For #1-8, assume that the lines that appear to be tangent are tangent. P,A and C are the centers of the circles. Find the following values. Show all work.

1. m∠n = _____

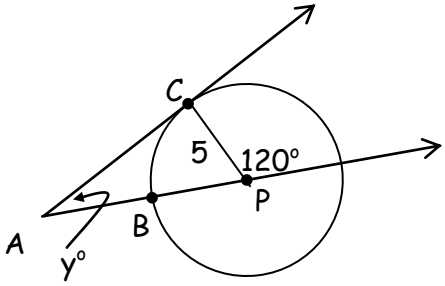


2. m∠x = _____

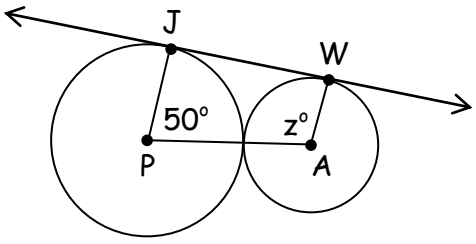


3. m∠y = _____

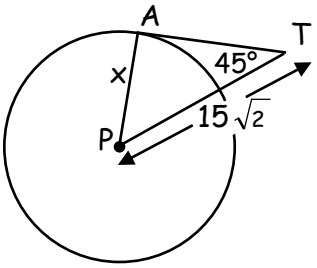
AP = _____



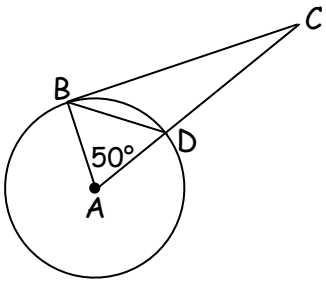
4. m∠z = _____



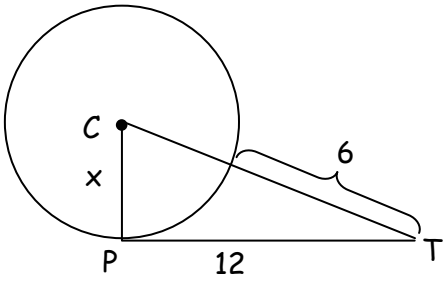
5. x = _____



6. m∠CBD = _____

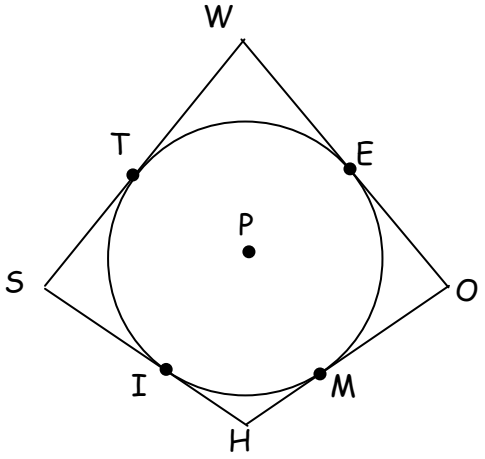


7. x = _____



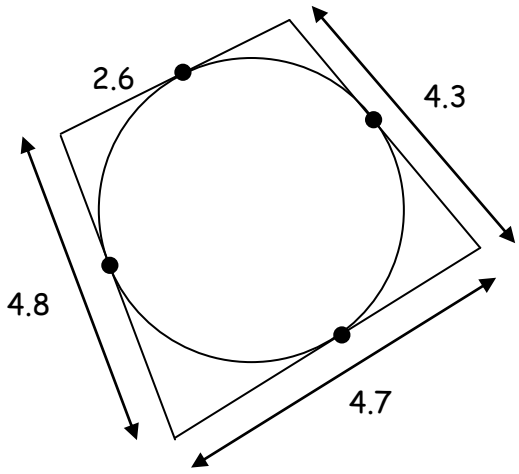
8. Quadrilateral SWOH is circumscribed about circle P. WO = 15, HM = 6 SW = 14, and ST = 5. What is the perimeter of the quadrilateral? Label the picture. Show all work.

Perimeter = _____



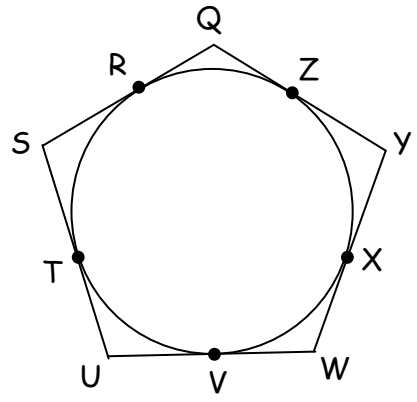
9. Find the perimeter of the quadrilateral that is tangent to the given circle.

Perimeter = _____



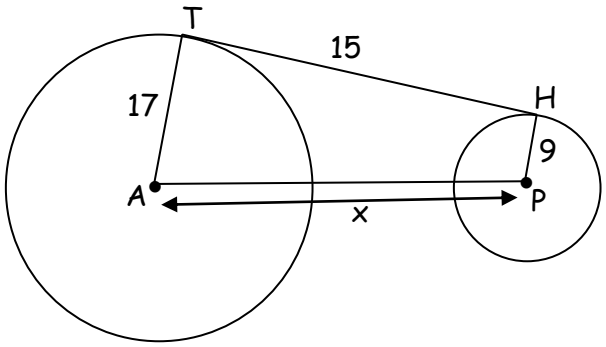
10. The circle is circumscribed by the pentagon as shown. QR = 9, QY = 14, UW = 10, QS = 16, UV = 8. Find the perimeter of the pentagon. Mark the congruent segments on the picture.

Perimeter = _____



11. $\overline{TH}$ is tangent to circles A & P. Find the value of x.

x = _____



12. $\overline{ED}$ & $\overline{CD}$ are tangent to circle O. Find the following:

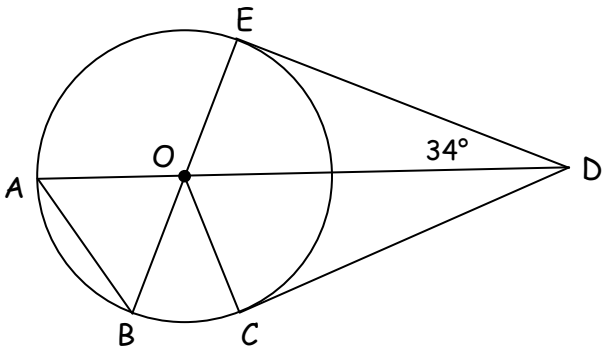
m∠BOC = _____

m∠OBA = _____

m∠AOE = _____

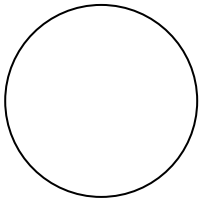
m∠CDO = _____

m∠EOD = _____



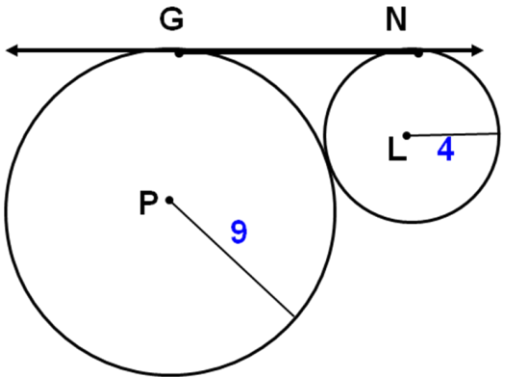
13. Draw two tangent segments from an external point to the circle making a 60° angle. If the diameter of the circle is 24, find the length of each tangent segment.

Tangent Length = _____



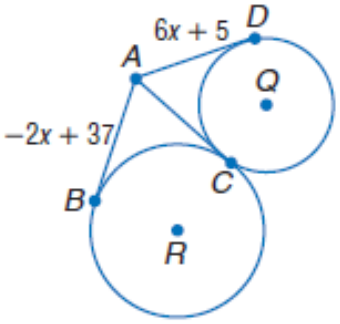
14. Find the measure of tangent GN. Show all work.

GN = _____



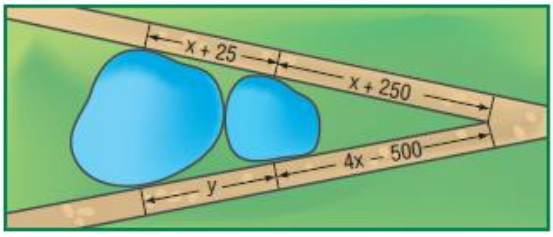
15. Assume the segments that appear tangent to the circles are tangent. Find x. Show all work.

x = _____



16. A landscape architect is planning to pave two walking paths beside two ponds as shown in the picture. Find the values of x and y. What is the total length of the walking paths? Show all work.

x = _____

y = _____

Total Length = _____