Team Problems for Chapter 12
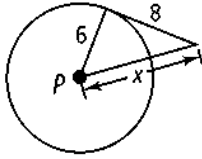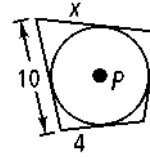
Problem #1: Chords/Tangents/Radii Problems

Find the value of x in each figure below. Assume lines that appear to be tangents are tangents.

1.

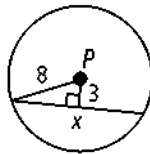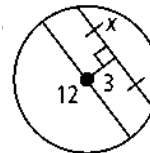
2.

Problem #2: More Chords/Tangents/Radii Problems

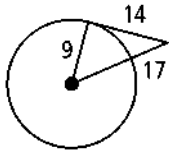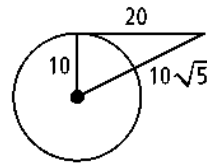Find the value of x in each figure below. Assume lines that appear to be tangents are tangents.

1.

2.

Problem #3: Tangent Line or not?

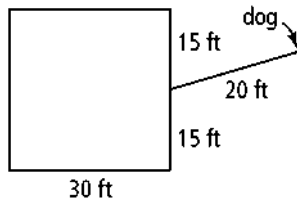Determine whether a tangent line is shown in each diagram.

1.

14
9
17

2.

20
10
10√5

Problem #4: An Area Problem

A dog is on a 20-ft leash. The leash is attached to a pipe at the midpoint of the back wall of a 30 ft-by-30 ft house, as shown in the diagram. Sketch and use shading to indicate the region in which the dog can play while attached to the leash. Find the area of this region.

dog
15 ft
20 ft
15 ft
30 ft

Problem #5: Inscribed Polygons

A polygon is inscribed in a circle. Are the perpendicular bisectors of the sides of the polygon concurrent? Explain. Illustrate your explanation with a picture of a (not regular!) hexagon inscribed in a circle.