The Oil Slick Problem

Suppose an oil slick in the shape of a circle is growing in the ocean. The two formulas you will need to answer the questions below are:

$$A = \pi r^2 \text{ and } C = 2 \pi r$$

1. If the Area is increasing at a rate of 11,000 ft^2 per hour and the radius is increasing at a rate of 30 ft per hour, what is the length of the radius?

2. If the radius is increasing at a rate of 30 ft per hour, how quickly is the circumference increasing?

Answer to problem 1: radius = 58.36 feet.

Answer to problem 2: circumference is increasing at 188.50 feet per hour.