

**Problem statement** Two circles have the same center. The inner circle has radius  $r$  which is increasing at the rate of 3 inches per second. The outer circle has radius  $R$  which is increasing at the rate of 2 inches per second. Suppose that  $A$  is the area of the region *between* the circles. At a certain time,  $r$  is 7 inches and  $R$  is 10 inches. What is  $A$  at that time? How fast is  $A$  changing at that time? Is  $A$  increasing or decreasing at that time?

