MCS21 Homework 32

1. At a certain instant, the sides of a square are 3 feet long and are increasing at a rate of 2 feet per minute. How fast is the area of the square increasing at that instant?

2. A rectangle whose sides are changing has a length of 5 inches and width of 3 inches. Its length is increasing at a rate of 7 inches per second and its width is increasing at a rate of 4 inches per second.
   (a) How fast is the perimeter of the rectangle changing? Is the perimeter increasing or decreasing?
   (b) How fast is the area of the rectangle changing? Is the area increasing or decreasing?

3. Jason is driving his car south at a rate of 80 mph and Josie is driving her car west at a rate of 60 mph. If Jason and Josie both start driving at exactly noon from the same location, how fast is the distance between Jason's car and Josie's car increasing at the end of 3 hours?