1.) (10 pts.) Consider the related rates problem:

The width of a rectangle is increasing at a rate of 2 cm/sec, and its length is increasing at a rate of 3 cm/sec. At what rate is the area of the rectangle increasing when its width is 4 cm and its length is 5 cm?

a.) (5 pts.) Draw the picture that goes with this related rates problem, and label all quantities and rates that you can.

b.) (5 pts.) A formula that could go with this problem is $A = lw$, where $A$ is the area of the rectangle, $l$ is the length of the rectangle, and $w$ is the width of the rectangle. Differentiate the formula with respect to time. (Do not do anything else. You do not have to finish solving the related rates problem.)