

Due: TODAY ONLY

Solve these Related Rates Problems:

- a. A screen saver displays the outline of a 2 cm by 3 cm rectangle and then expands the rectangle in such a way that the 2 cm side is expanding at the rate of 4 cm/sec and the ratio of the sides of the rectangle remains constant.

How fast is the area of the rectangle increasing when its dimensions are 8 cm by 12 cm?

- b. A receptacle is in the shape of an inverted square pyramid 10 inches in height and with a 6 x 6 square base. The volume of such a pyramid is given by

$$V = \frac{1}{3}x^2h$$

where x is the length of a side of the square base.

Suppose that the receptacle is being filled with water at the rate of 0.2 cubic inches per second. How fast is water rising when it is 2 inches deep?