A spotlight is positioned at ground level 25 ft from a wall. A 5 ft tall person walks toward the wall at 2/3 ft/sec. How fast is the height of the person's shadow on the wall changing when the person is 10 ft from the wall?
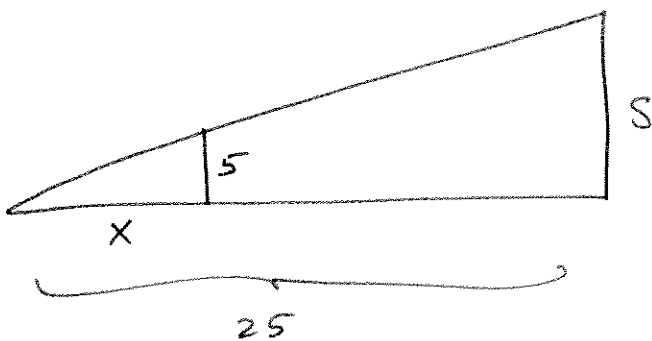
$$\frac{S}{25} = \frac{5}{X}$$

and

$$\frac{dx}{dt} = \frac{2}{3}$$

$$S = \frac{125}{X}$$

$$\frac{ds}{dt} = \frac{-125}{x^2} \frac{dx}{dt} = \frac{-125}{15^2} \cdot \frac{2}{3} = \frac{-5}{9} \cdot \frac{2}{3}$$

$$= \frac{-10}{27} \frac{ft}{sec}$$

$$10' \text{ from wall} \iff X = 15$$