

Problem 1

The height of a triangle increases at a rate of $1m/s$ and the base remains at a constant length of $2m$. Show that the triangle's area increases at a rate which is independent of its height.

Problem 2

The area of a square increases at a constant rate of $3\frac{in^2}{sec}$. How fast are the sides growing when the square's area is $4in^2$?

Problem 3

A $10ft$ ladder is leaning up against a wall. The floor makes a right angle with the wall. The base of the ladder begins to slide away from the wall at a rate of $2\frac{ft}{sec}$. How fast is the top of the ladder sliding down the wall when the base of the ladder is $4ft$ away from the wall?

Problem 4

One side of a rectangle grows at a constant rate of $2\frac{cm}{sec}$ and the base grows at a constant rate of $3\frac{cm}{sec}$. When the side is $3cm$ and the base is $5cm$, find how fast the area of the rectangle is increasing.