The radius of a circle is growing at one inch per second. How fast is its area increasing when the radius is 24 inches?

The length of a rectangle is decreasing at $2\ cm/sec$. The width is increasing at a rate of $3\ cm/sec$. How is the area of the rectangle changing when the length is $10\ cm$ and the width is $20\ cm$?

Water is flowing at a rate of $50\ m^3/min$ out of a shallow conical reservoir (pointing down). The reservoir has a base radius of $45m$ and a depth of $5m$. How fast is the water level falling when the water is $4m$ deep?

A $13ft$ long ladder is leaning against a wall. The bottom of the ladder is pulled away from the wall along a level ground at a rate of $2ft/sec$. How fast is the top of the ladder moving when the base of the ladder is $12ft$ from the wall?

A spherical snowball is melting. When the snowball has a radius of $4in$, its radius is decreasing at a rate of $\frac{1}{4}\,in/hr$. How fast is the volume of the snowball changing at that point in time?

An ice cube is melting in such a way that it remains a cube. When an edge of the cube is $2in$, the volume of the cube is decreasing at a rate of $0.1in^3/min$.

How fast is the length of an edge of the cube changing at that point in time?

How fast is the surface area changing?