

3. Suppose that a cube's volume increases at a constant rate of $2 \frac{\text{cm}^3}{\text{min}}$. How fast are its sides growing at the time the sides are 10cm ? How fast is the surface area increasing at this time?

4. A 6 ft tall Batman runs (into the night) away from a 10 ft streetlamp at a rate of $1 \frac{\text{m}}{\text{sec}}$. How fast is his shadow growing when he is 5 ft away from the lamp? How fast is the angle between the ground and the top streetlamp changing at the tip of his shadow?