Instructions. For each problem

- Find two (or more) changing quantities. Assign variables.
- Find an equation relating those variables.
- Differentiate (with respect to time).
- Plug in and solve.

1. A cube is expanding so that its surface area is growing at a rate of 2 in$^2$/min. How fast is the length of one side changing when that side is 5 inches long?
2. A 5 foot tall person walks towards a light on a pole 20 feet high. How fast is the length of the person’s shadow changing when the shadow is exactly 15 feet long? The person walks at a speed of 5 feet per second.