6. [8 points] In this problem, you may use the following facts:

- The surface area S of a sphere of radius r is given by $S = 4\pi r^2$.
- The volume V of a sphere of radius r is given by $V = \frac{4}{3}\pi r^3$.

Suppose a spherical snowball is melting so that its surface area decreases at the constant rate of 20 cm^2 per minute. Use this information to answer the following questions, and remember to include appropriate units in your answers.

a. [4 points] How fast is the radius of the snowball changing when the radius is 5 cm?

Answer: _____

b. [4 points] How fast is the volume of the snowball changing when the radius is 5 cm?

Answer: _____