4. (8 points) A spherical snowball is melting so that its surface area decreases at the constant rate of 40 cm^2 per minute. The surface area and volume of a sphere of radius r are $S = 4\pi r^2$ and $V = 4\pi r^3/3$, respectively. Use this information to answer the following, and remember to include appropriate units in your answers.

    (a) How fast is the radius of the snowball changing when the radius is 5 cm?

    (b) How fast is the volume changing when the radius is 5 cm?

5. (8 points)
    (a) Find the tangent line approximation for $f(x) = \frac{x}{x-1}$ near $x = 3$.

    (b) Is the approximation an overestimate or an underestimate of $f(x)$ for values of x near 3? Explain.