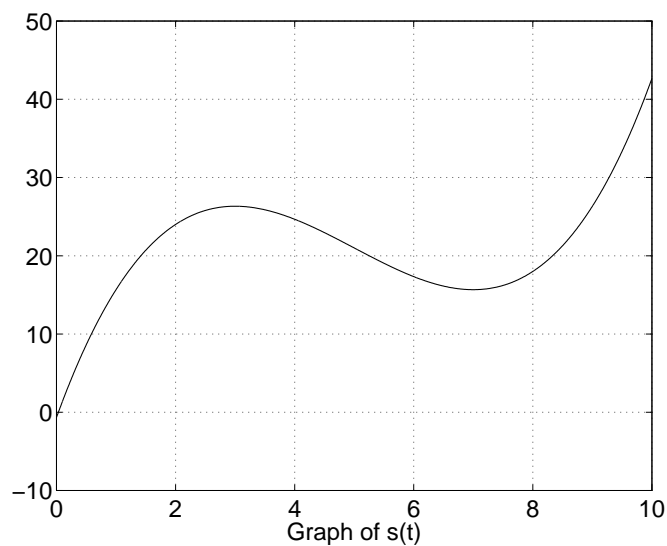


3. (7 points) Suppose that $f(T)$ is the cost to heat my house, in dollars per day, when the outside temperature is T degrees Fahrenheit.

(a) What does $f'(23) = -0.17$ mean in the context of this problem?

(b) If $f(23) = 7.54$, and $f'(23) = -0.17$, what is the approximate cost to heat my house when the outside temperature is 20 degrees Fahrenheit?

4. (8 points) An object is moving on a straight line so that its distance (measured in feet) to the right of a fixed point on the line at time t (measured in seconds) is given by the function s whose graph is in the following figure.



(a) At what times (approximately) is the object moving to the right? to the left?

(b) At what times (approximately) does the object have positive acceleration? negative acceleration? (Explain what properties of the graph give you this information.)

(c) At what times (approximately) is the velocity of the object increasing? Explain.