1. The temperature T, in degrees Fahrenheit, of a burrito when it comes out of a microwave oven is $134°$ F. It's too hot to eat, so you let it cool for a bit. Suppose that time t is measured in minutes and we have

$$\left. \frac{dT}{dt} \right|_{t=5} = -2.3$$

   Write a sentence summarizing what this tells us. Include (correct!) units with any numbers. *DO NOT* use the words *derivative*, *negative*, or the negative sign. *DO* use one of the words *increasing* or *decreasing*.

2. The temperature T, in degrees Fahrenheit, of a burrito when it comes out of a microwave oven is $134°$ F. It's too hot to eat, so you let it cool for a bit in a $68°$ F room. You start playing a video game and forget about the burrito until several hours later. Sketch a graph of the temperature of the burrito as a function of time. Label two numerical values on the vertical (T) axis.

3. (a) Find a function $y(x)$ whose derivative is 3 times the original function. Is there more than one such function? If so, give another.

(b) Find a function $x(t)$ whose second derivative is 16 times the original function. Is there more than one such function? If so, give another.

(c) Find a function $y(t)$ whose second derivative is -16 times the original function. Is there more than one such function? If so, give another.

(d) Find a function $y(x)$ whose second derivative is -5 times the original function. Is there more than one such function? If so, give another.