

Name: _____

Directions: Show all work. No credit for answers without work.

1. [4 parts, 1 point each] The weight, W (in lbs), if a child is a function the time t (in years) since birth, so $W = f(t)$.

(a) Do you expect $f'(t)$ to be positive or negative? Explain.

(b) What are the units of $f'(t)$?

(c) Explain what $f'(4) = 7$ tells you in terms of weight and time.

(d) As t increases, do you expect $f'(t)$ to increase, decrease, or stay about the same? Explain.

2. [3 points] Originally, a mutual fund is worth \$5 billion in total. After 3 days, the value of the mutual fund decreases to \$4.6 billion. Estimate the relative rate of change in the value of the mutual fund. Give proper units.
3. [3 points] Graph a function $f(x)$ such that $f''(x) > 0$ for all x and $f'(x) < 0$ for all x .