

Name: _____ Score: _____

1. The function $f(t) = \sqrt{t^2 + 8t}$ represents the position in feet of an object at time t seconds. Find the average velocity of that object between $t = 1$ and $t = 2$.
2. Compute the derivative function $f'(x)$ using the definition¹.

$$f(x) = 3x^2 + 1$$

—— Write down your solutions BELOW this line, please. ——

¹You should have memorized the definition by now. Still, if you have not, I am happy to provide you with it just this one time. Namely, the derivative of $f(x)$ is the function $f'(x)$ given by

$$f'(x) = \lim_{h \rightarrow 0} \frac{f(x+h) - f(x)}{h}$$

provided the limit exists.