Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Warm Up 1.5 SHOW YOUR WORK!!!**

Solve the following problems by hand, use a graphing calculator to check:

1. Write an equation in slope-intercept form for a linear function where the graph of the function passes through the point (2, -3) and is perpendicular to the line whose equation is

2. The cubic function that models the sales of the car the Nissan 370Z is:

Where:

* x is the number of years after 2009 when the car first went into production.
* f(x) is the number of units sold (in thousands).

This function estimates the sales trends over time.

1. Find *f(0)*. Interpret in a sentence.
2. Find *f(10)*. Round to the nearest whole car. Interpret in a sentence.
3. Using your previous two answers, find the average rate of change, rounded to the nearest whole number, from 2009 to 2019. Describe what this means in a complete sentence with units.

3. Find and simplify the difference quotient.

a. b.