

Homework 2 - Math 140

Name: _____

In each problem below, find an equation for the line that fits the description.

1. Passes through $(1, -2)$ and $(3, 4)$.

2. Passes through $(-4, 5)$ and $(8, 2)$

3. Has a slope of 5 and crosses the x -axis at $x = 3$.

4. Passes through $(3, 4)$ with slope of -6 .

5. Find the slope and y -intercept of the line $4x + 6y = 24$.

6. Suppose that there are 4 inches of snow already on the ground when a new snow storm arrives. During the storm, snow falls at a rate of $2/3$ of an inch per hour. Find a formula for the depth of the snow on the ground (y) as a function of the number of hours (x) that have passed since the storm started.

7. At this rate, how long would it be until the snow is 1 foot (12 inches) deep?

8. Suppose that the cost for a business to manufacture x widgets is $C(x)$ dollars. Explain in words what the following equation means:

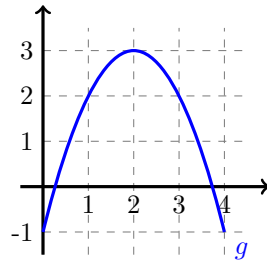
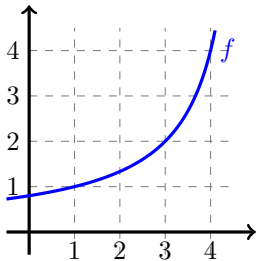
$$C(5,000) = 6,000.$$

Suppose that $f(x) = \frac{1}{x+2}$ and $g(x) = 4x + 3$.

9. Calculate $f(g(0))$.

10. Calculate $g(f(0))$.

The following graphs show two different functions $f(x)$ and $g(x)$.



Use the graphs to evaluate the following.

11. $f(g(2))$

12. $g(f(1))$

13. $g(f(4))$