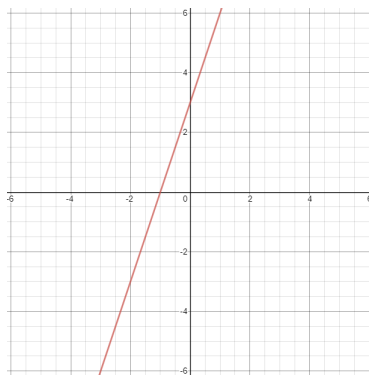# MA 137 Worksheet #1

Sections 1.3-1.4

8/18/20
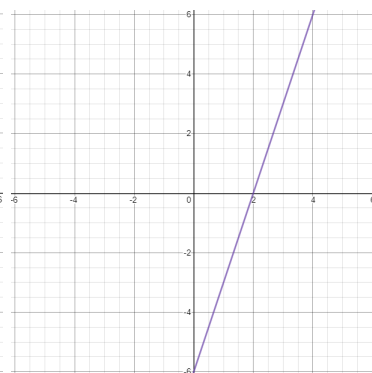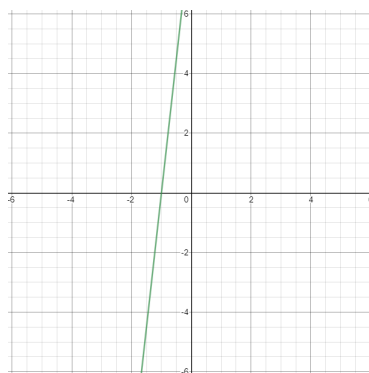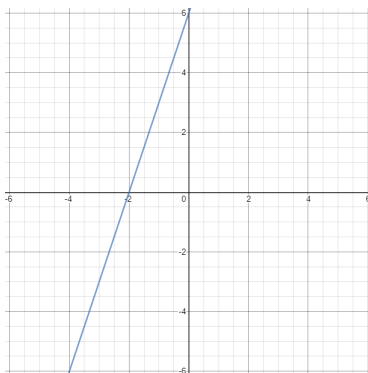
1. Find an equation for the line through the points $(-4, -3)$ and $(1, 7)$.

2. Find a simplification of the expression $\dfrac{f(x+h) - f(x)}{h}$ where $f(x) = x^2 + 5$.

3. If the graph of $f(x)$ is

match the functions $3f(x)$, $f(x-3)$, and $f(x) + 3$ with the graphs below:

4. Consider $f(x) = 2x - 4$ and $g(x) = \dfrac{1}{x+2}$. Find the simplified form of the composition $(g \circ f)(x)$ (including any restrictions on x).

5. Let $f(x) = \dfrac{2x+7}{3-4x}$. Find the inverse, $f^{-1}(x)$ of f. What are the domains of $f(x)$ and $f^{-1}(x)$? Carefully label the domain of each function.

6. Find the center and radius of the circle with the following equation:

$$x^2 + y^2 + 10x - 6y + 30 = 0$$