

For each of the following:

1. Simplify the function.
2. Graph the **Original Function** using Nspire.
3. Sketch the graph.
4. Look at the Table of Values and complete the fourth column
5. **Adjust your graph as necessary and answer the question in the fifth column.**

Original Function	Simplified Function	Sketch the Graph	Table of Values	How does this point show up on the graph?
$f(x) = \frac{x^2 - 4}{x - 2}$			(2, _____)	
$g(x) = \frac{2x^2 - x - 1}{x - 1}$			(1, _____)	
$h(x) = \frac{1}{x - 3}$			(3, _____)	
$i(x) = \frac{2x + 1}{x - 2}$			(2, _____)	

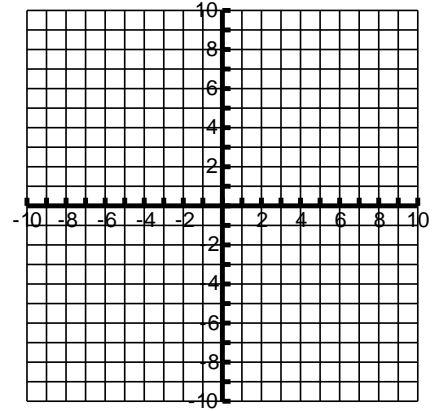
Original Function	Simplified Function	Sketch the Graph	Table of Values	How does this point show up on the graph?
$j(x) = \frac{2x + 1}{(x + 1)(x - 2)}$			(-1, _____) (2, _____)	
$k(x) = \frac{2x + 4}{(x + 2)(x + 5)}$			(2, _____) (-5, _____)	
$l(x) = \frac{1}{x} + 2$			(0, _____)	
$m(x) = \frac{x^3 + 3}{x^2 + 2}$			(-2, _____) (0, _____) (3, _____)	

**Summary:**

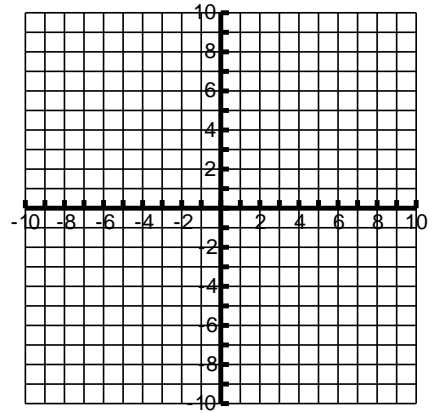
There is a \_\_\_\_\_ from a factor that is both in the \_\_\_\_\_ and \_\_\_\_\_

There is a \_\_\_\_\_ from a factor that is still in the \_\_\_\_\_ after \_\_\_\_\_

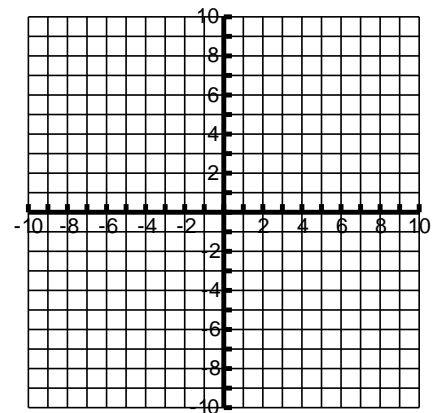
1.  $f(x) = \frac{2x^2 - 15x + 25}{x - 5}$



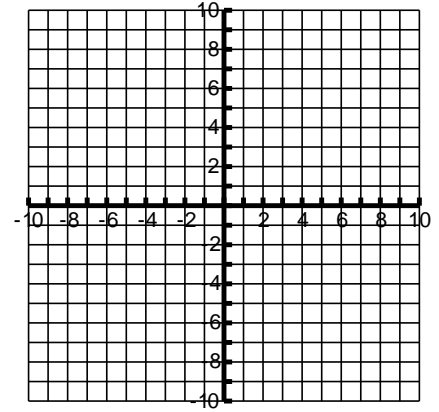
2.  $f(x) = \frac{5x^3 - 10x^2 - 15x}{5x}$



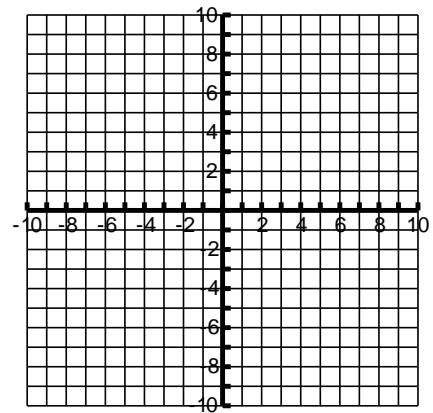
3.  $f(x) = \frac{3 - 3x}{3x^2 - 18x + 15}$



$$4. \quad f(x) = \frac{x^2 + 4x - 12}{2x + 12}$$



$$5. \quad f(x) = \frac{x^2 + 4x + 4}{x - 2} \times \frac{x^2 - 6x + 8}{3x + 6}$$



$$6. \quad f(x) = \frac{5x - x^2}{-x^3 + 2x^2 + 15x}$$

