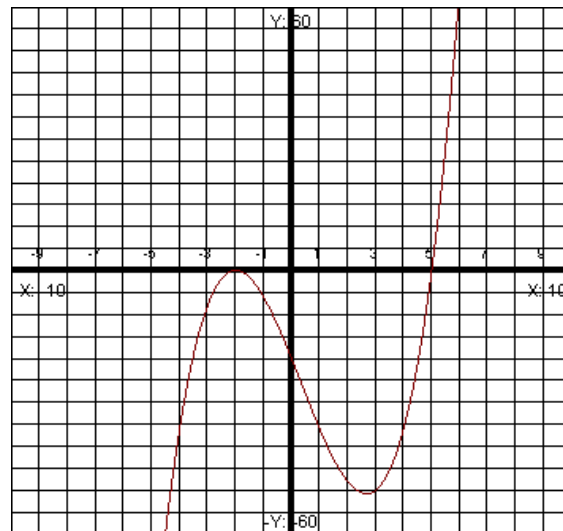


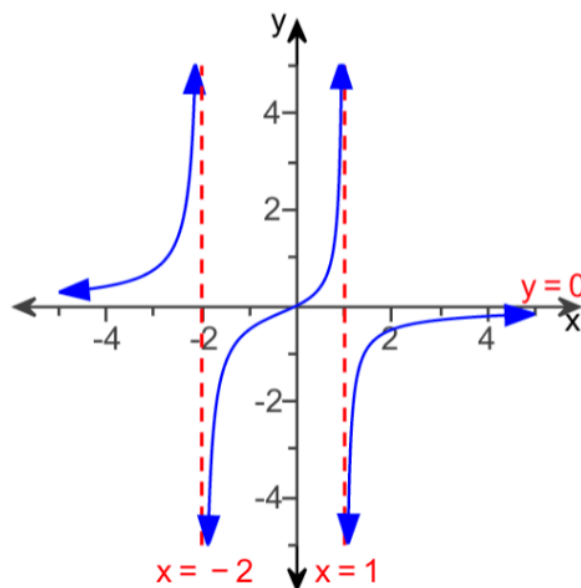
4.5 Polynomial and Rational Inequalities

This section is looking at sections of graphs that are above and below the x-axis.

EXAMPLE: Use the graph of $f(x)$ given below to solve: (a) $f(x) > 0$ and (b) $f(x) \leq 0$.



EXAMPLE: Use the graph of $f(x)$ given below to solve: (a) $f(x) < 0$ and (b) $f(x) \geq 0$.



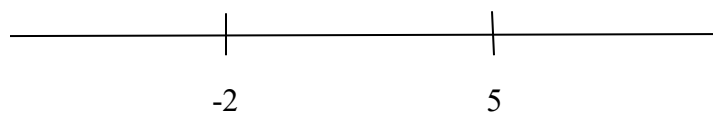
EXAMPLE: Solve and write your answer in interval notation: $(x - 5)(x + 2)^2 < 0$

Table Method:

$x - 5$			
$(x + 2)^2$			

-2 5

Number Line Method:

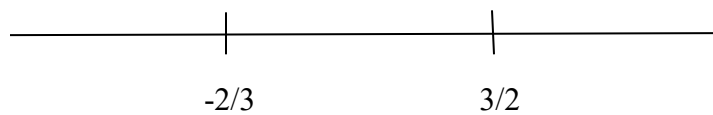


EXAMPLE: Solve and write your answer in interval notation: $6x^2 < 6 + 5x$

$3x + 2$			
$2x - 3$			

$-2/3$ $3/2$

Number Line Method:



EXAMPLE: Solve and write your answer in interval notation: $3x^3 \geq -15x^2$

$3x^2$			
$x + 5$			

-5 0

EXAMPLE: Solve and write you answer in interval notation: $\frac{(x-2)(x+1)}{x-4} \leq 0$

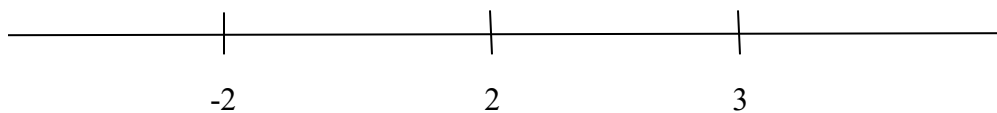
$x - 2$				
$x + 1$				
$x - 4$				

-1

2

4

EXAMPLE: Solve and write your answer in interval notation: $\frac{x^2 - 4}{x - 3} > 0$



EXAMPLE: Solve and write your answer in interval notation: $\frac{x+2}{x-4} > 1$

6		
$x - 4$		

4

EXAMPLE: Solve and write your answer in interval notation: $\frac{2x^2 + 3x - 4}{x + 1} \leq 2$

$x + 2$				
$2x - 3$				
$x + 1$				

-2

-1

$\frac{3}{2}$