

Advanced Algebra Final Review#2

Polynomials Unit

For the following functions, make sure you can ...

- Find the zeros of the function
- Describe the end behavior of the function
- Describe when this function is positive
- Sketch the function

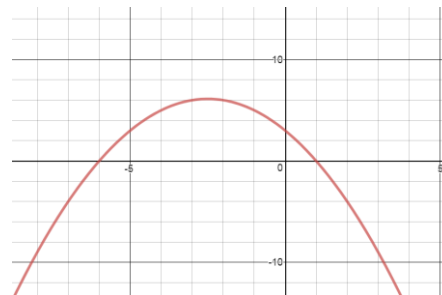
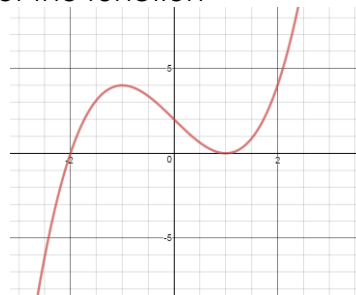
$$f(x) = (x - 4)(x + 2)(2 - x)$$

$$f(x) = -x^2 + 10x - 25$$

$$f(x) = 18x - 3x^2 - x^3$$

For the following graphs, make sure you can ...

- Find the roots of the graph
- Describe the end behavior of the function
- Write the equation of the function



Rational Expressions

For the following rational expressions, make sure you can ...

- Simplify the expression
- State values for which the original expression is undefined / not valid
- State values for which the simplified expression is undefined / not valid
- State the domain

$$\frac{x-1}{3x} + \frac{2x+1}{6x^2}$$

$$\frac{x^2-9}{x^2-2x-3}$$

$$\frac{x^3-2x^2+5x-10}{x^2-4}$$

Linear Inequalities

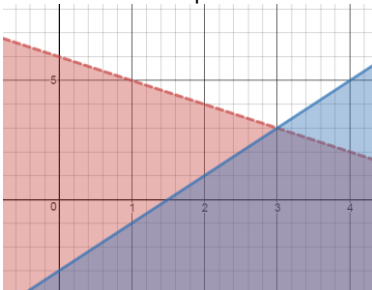
For the given system of inequalities, make sure you can ...

- Check to see if a given point is a solution
- Graph the system, including accurate shading
- Identify the feasible region

$$\begin{cases} 2x + y < 6 \\ x - y \leq 5 \end{cases} \quad \begin{cases} x + y < 4 \\ y \geq 1 \\ x \geq 0 \end{cases}$$

For a given system of inequalities, make sure you can ...

- Write the equations of the system given
- Find a point that is a solution of the system



With the end of school approaching, a store is planning on having a sale on school materials. They have 600 notebooks, 500 folders and 400 pens in stock, and they plan on packing it in two different forms. In the first package, there will be 2 notebooks, 1 folder and 2 pens, and in the second one, 3 notebooks, 1 folder and 1 pen. (hint: three equations!)