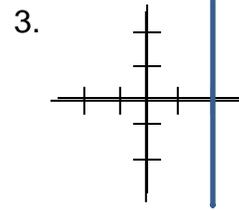
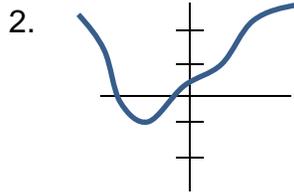


Review: Functions – Polynomials – Rational Functions

Find: a) the domain and range    b) Determine if this is a function (yes or no)

1.  $\{(3, 5), (4, 7), (2, 7), (1, 4)\}$



4. If  $f(x) = 2x^2 - 5$ , find  $f(3)$ .

State how the graph of the parent function is transformed to give the graph of the given function.

5.  $f(x) = |x|$ ,  $f^*(x) = 4|x + 3| - 6$

6.  $f(x) = x^2$ ,  $f^*(x) = -(3x + 4)^2 - 5$

Is the following a polynomial? If yes, what is the DEGREE of the polynomial.

7.  $x^2y^5$

8.  $x^{\frac{1}{2}}$

9. 4

Simplify

10.  $(x^2 - 4x + 5) - (x^2 - 2x + 2)$

11.  $(3x - 3)(4x + 5)$

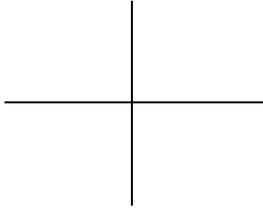
12.  $x - 5 \overline{) x^3 - 3x^2 - 15x + 25}$

13.  $2x + 3 \overline{) 2x^3 - 3x^2 + x + 15}$

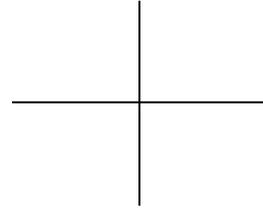
14 If  $f(x) = 8x - 1$ ,  $g(x) = 4x + 5$  find  $(f \circ g)$  AND  $(g \circ f)$

Draw a polynomial that has:

15. An odd degree, 3 zeros, and a Positive leading coefficient.



16. An even degree, no zeros, and a Negative leading coefficient.



Find the y-intercept and x-intercept(s) of the following:

17.  $y = 4x - 5$

18.  $y = x^2 + 3x + 2$

Find any vertical, horizontal or slant asymptotes or holes. Then graph.

19.  $f(x) = \frac{x+3}{x^2-9}$

20.  $f(x) = \frac{x^2+2x-7}{x+5}$

