Identify the characteristics for the following polynomials:

1. $f(x) = 3 + x^2 - 4x - 5x^3$

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

Standard form
Leading Coefficient
Degree
# of Zeros
Classify by degree
Classify by # of terms
End Behavior: as x → +∞, f(x) → _____   as x → - ∞, f(x) → _____
# of Turns

Simplify the following:

3. $(5x^2 - 3x + 4) + (-8x - 2)$

4. $(7x^4 - 2x^3 + 6x - 5) - (8x^3 - 5x + 5)$

5. $(5x+2)(3x - 4)$

Simplify

6. $(2x+1)(5x^2 - 3x + 4)$

7. $(3x-2)^2$

Expand using Pascal's Triangle
(be sure to KNOW Pascal's triangle)

8. $(x - 5)^5$

9. $(a - 3b)^4$

Given $f(x) = 2x^2 + 5$ and $g(x) = 3x - 4$

10. find $f(x) - g(x)$

11. find $f(x) \cdot g(x)$

12. find $f(g(x))$

Given $f(x) = 2x^2 + 5$ and $g(x) = 3x - 4$

13. find $f(-2) + g(3)$

14. find $g(f(4))$

Find the inverse of each function.

15. $f(x) = 5x - 3$
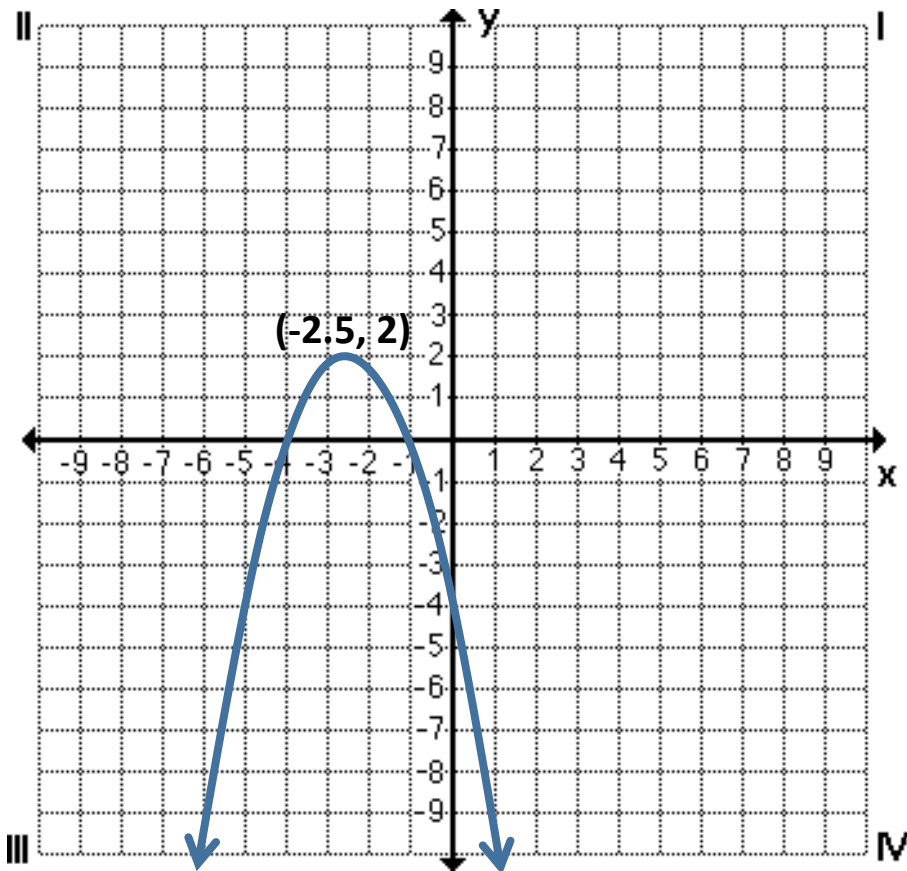
16. $g(x) = \dfrac{2}{3}x - 2$

Use compositions to determine whether the two functions are inverses. WORK REQUIRED.

17. $f(x) = x + 7$ and $g(x) = x - 7$

18. $h(x) = -2x + 4$ and $k(x) = -\frac{1}{2}x + 2$
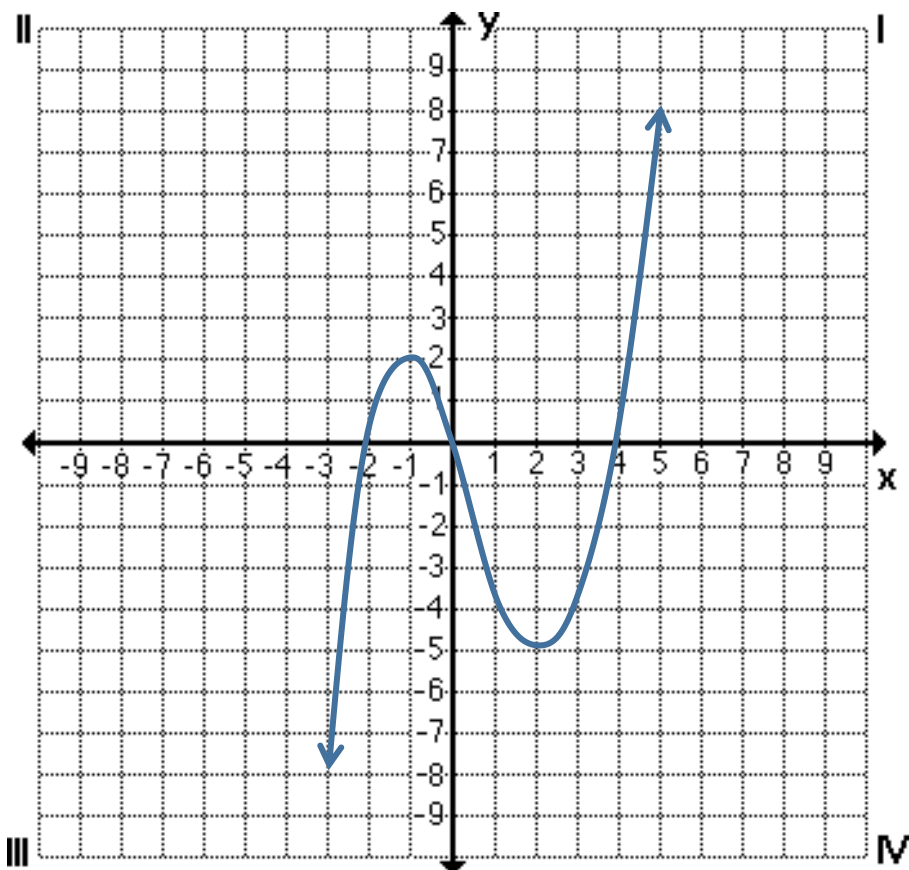
Characteristics of Polynomial Graphs

19.

Identify: Domain, Range, Zero(s), y – intercept, # of Extrema, Relative Minimum, Relative Maximum, Absolute Maximum, Absolute Minimum, Intervals of Increase, Intervals of Decrease, End Behavior as x → +∞, f(x) → _____   as x → - ∞, f(x) → _____

Characteristics of Polynomial Graphs

20.

Identify: Domain, Range, Zero(s), y – intercept, # of Extrema, Relative Minimum, Relative Maximum, Absolute Maximum, Absolute Minimum, Intervals of Increase, Intervals of Decrease, End Behavior as x → +∞, f(x) → _____   as x → - ∞, f(x) → _____