Pre – Calculus Name _____
REVIEW: 2.1, 2.2, 2.5

2-1 Practice

For numbers 1 and 2, graph and analyze each function. Describe the domain, range, intercepts, end behavior, continuity, and where the function is increasing or decreasing.

1. $f(x) = 2x^6$

2. $f(x) = -\sqrt[3]{(2x + 5)^2}$

2-2 Practice

For numbers 3 and 4, describe the end behavior of the graph of the polynomial function using limits.
Explain your reasoning using the leading term test.

3. $f(x) = -7x^5 - 2x^3 + 3x^2 + 5$

4. $f(x) = x^6 - 2x^4 + 1$

For numbers 5 and 6, state the number of possible real zeros and turning points of each function.
Then determine all of the real zeros (and their multiplicity if applicable) by factoring.

5. $f(x) = x^4 - 16x^2$

6. $f(x) = 3x^3 - 60x^2 + 300x$

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

2-5 Practice

For numbers 8 – 10, find the domain of each function and the equations of the vertical or horizontal asymptotes, if any.

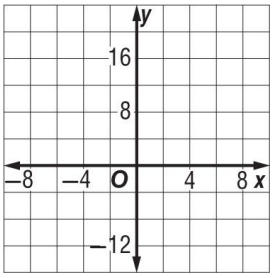
8. $f(x) = \frac{4}{x^2 + 1}$

9. $f(x) = \frac{2x + 1}{x + 1}$

10. $f(x) = \frac{x + 3}{(x + 1)(x - 2)}$

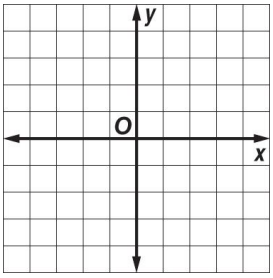
For numbers 11 and 12, for each function, determine any asymptotes, holes, and intercepts. Then graph the function and state its domain.

11. $f(x) = \frac{5x^2 - 10x + 1}{x - 2}$



x	y

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



x	y