Functions and Graphing
Review for Test 2

Solving Equations

Answers should be whole numbers or fully simplified fractions. No decimals!

1. $3(x + 3) + 1 = 35$

2. $\frac{5x-3}{7} = \frac{2x+6}{9}$

3. $48 > 6 - 4(x + 2) - 3$

4. $x^2 - 7x - 78 = 0$

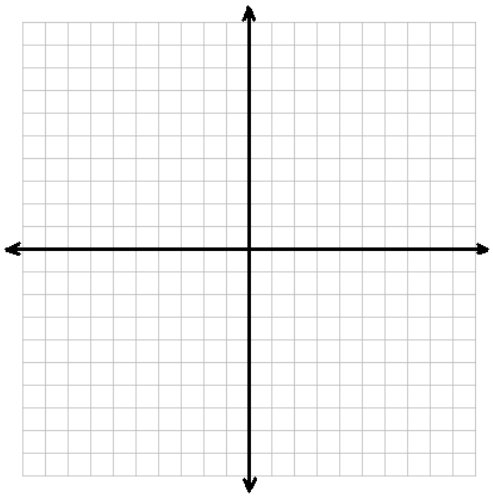
5. $3x^2 - 5x - 2 = 0$

6. $9x^2 - 196 = 0$

Graphing

Sketch each graph and its parent on the same set of axes. Write the Parent Function. ***(Use tables to help you!)***

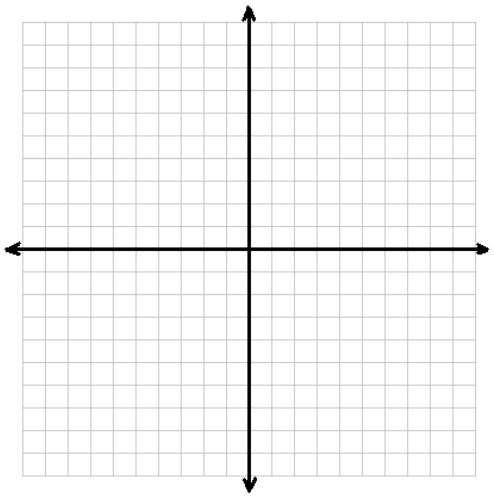
7. $f(x) = (x-3)^2 + 5$



Parent Function: _____

Is this function symmetric with the *x*-axis, *y*-axis, the origin, or none of the above?

8. $f(x) = (x+6)^3 + 1$



Parent Function: _____

Is this function symmetric with the *x*-axis, *y*-axis, the origin, or none of the above?

Math Analysis

Name the independent variable and the dependent variable of the situation given below:

9. The plant produces fewer tomatoes as the daily temperatures drop.

Independent variable: _____ *Dependent variable:* _____

Determine the domain and range for each function below. Remember, you can determine domain algebraically. You may need to use your graphing calculator to determine range.

10. $f(x) = \sqrt{5x - 6}$

11. $f(x) = \dfrac{2}{x - 4}$

Given $f(x) = 2x^2 + x - 5$, find each value:

12. $f(4)$

13. $f(h - 3)$

Determine whether each function is an even function, an odd function, or neither.

14. $y = x^2 - 81$

15. $y = -2x^7 + 3x^5$

Given f(x) = 7x + 4 and g(x) = x^2 – 2, find each function.

16. $(f \circ g)(x)$

17. $(g \circ f)(x)$

18. Find the inverse of $f(x) = \pm\sqrt{x+5}$. Then state whether the inverse is a function.

19. Find the inverse of $f(x) = \frac{x-1}{8} + 3$. Then state whether the inverse is a function.

20. Use composition to determine if the functions $f(x) = \sqrt[3]{x+2}$ and $g(x) = x^3 - 2$ are inverses of each other. Show your work, then write *yes* or *no*.

$f \circ g$ =

$g \circ f$ =