Pre-Calculus Chapter 1 Review Name

 Date Block

State the domain and range of the following.

1. $y=\frac{x-4}{\sqrt{x^{2}-6}}$ 2. $y= \frac{1}{\sqrt{25- x^{2}}}$

3. $y= \frac{x-3}{x^{2}-16}$ 4. $y= \sqrt{4- x^{2}}$

5. $y= \frac{1}{3x-9}$ 6. $y=3x-4$

7. Determine if the following are inverses.

 $f\left(x\right)= x^{2}+3$ and $g\left(x\right)= \pm \sqrt{x-3}$

Find the inverse. Graph both the original function and its inverse.

8. f(x) = 4(x + 2) 9. f(x) = x2 + 4

10. $f\left(x\right)=x-3$ $g\left(x\right)=x+4$

 a. Find $f^{-1}\left(x\right)∙g^{-1}\left(x\right)$ b. Find $\frac{f(x)}{g(x)}$

11. $f\left(x\right)= x^{2}-x+7$ Evaluate $f(x-1)$

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

 a. find $f\left(x\right)-g\left(x\right)$ b. find $f\left(g\left(x\right)\right)$

 c. find $(fg)\left(-1\right)$

13. Write the equation of the line perpendicular to 2x-3y = -5 through (-1, 4).

14. Find the equation of a circle whose diameter has endpoints (2, -5), (8, -1).

15. B is the midpoint of $\overbar{AC}$. If B is (2, -4) and A is (-3, 0), find C.

16. ∆DEF has vertices D(3,4), E(3, 1), F(-1,1).

A. Find the equation of the median from D.

B. Find the equation of the altitude from E.

Describe the changes to the equations. Graph each of the following. Find the domain and range of the following. You should be able to do these without a calculator.

17. $y=2\left(x+2\right)^{2}-3$ 18. $y= \frac{2}{x-3}$



19. $y=\sqrt{-x+5}$ 20. $y= -\sqrt[3]{x+3}+2$



21. $y= \frac{1}{2}x^{3}-1$ 22. $y= -\left|x-3\right|-1$



Use your graphing calculator to analyze all the significant features of the graph. Show and label a sketch of your graph.

23. $y= x^{3}-24+x+6$



**Zeros- \_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Max- \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Min- \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Increase- \_\_\_\_\_\_\_\_\_\_\_\_**

**Decrease- \_\_\_\_\_\_\_\_\_\_**

24. $y= -2x^{3}+ x^{2}+18x-9$

**Zeros- \_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Max- \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Min- \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Increase- \_\_\_\_\_\_\_\_\_\_\_\_**

**Decrease- \_\_\_\_\_\_\_\_\_\_**