Pre-Calculus Review Day 1 Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Rewrite the following using interval notation.

1. $-7\leq x<9$ 2. $x<17$ 3. All real numbers

For the given function, $f\left(x\right)=\left\{\begin{array}{c}-2x-6, for x\leq -2\\2-x^{2}, for-2<x<2\\2x-6, forx\geq 2\end{array}\right.$ , find the indicated values.

4. $f(-4)$ 5. $f(2)$

Determine whether the following is an even, odd or neither function. Then state the type of symmetry (y-axis, origin or neither) of the graph.

6. $f\left(x\right)=x^{3}+1$ 7. $f\left(x\right)=x^{\frac{5}{3}}$

Find the equation of each line. Answer in point-slope form.

8. Through the points (-2,1) and (2,-2) 9. Through (-3,0) and normal to $2x-y=6$

Algebraically determine the domain and range of the following functions. State the equations of any horizontal asymptotes and /or vertical asymptotes.

10. $f\left(x\right)=\frac{2x+4}{x^{2}-4}$ 11. $y=\frac{x^{2}-4}{x^{2}-x-12}$ 12. $y=\frac{2x-3}{2x^{2}+x-6}$

Sketch the graph of the function. Then find its domain and range.

13. $f(x)=\left\{\begin{array}{c}3-x, x\leq 1\\2x, 1<x\end{array}\right.$ 14. $f\left(x\right)=\left\{\begin{array}{c}x^{2} for x<0\\x^{3} for 0\leq x\leq 1\\2x-1 for x>1\end{array}\right.$

Write a piecewise formula for the function.

15. 16.  17.

Rewrite the following as a piecewise function.

18. $y=\frac{\left|x+1\right|}{x+1}$ 19. $y=\left|x-2\right|+3$