## Absolute Value Review - show ALL work on a SEPARATE piece of paper!! Review due on day of test!

\#1-2. The graph below models a car's distance from a road sign as the car travels at a constant speed. Write an equation that best represents the situation.
1.

2.

\#3 - 4. Compare the graphs of the pair of functions. Describe how the graph of the second function relations to the graph of the first function.
3. $y=-3|x|$ and $y=-3|x|+4$
4. $y=4|x|$ and $y=4|x|-5$
\#5 - 6. Graph the absolute value equation.
5.
$y=|x-3|$
6. $y=|2 x-4|+3$
7. What is the vertex of the function $y=|3 x-3|+6$ ?
8. What is the vertex of the function $y=|x-2|-6$ ?
9. Graph the equation of $y=|x|$ translated 2 units down. Then find the domain and range.
10. Graph the equation of $y=|x|$ translated 3 units left. Then find the domain and range.
11. Graph the translation of the function $y=|x|$ with a vertex of $(5,4)$.
12. Graph the translation of the function $y=|x|$ with a vertex of $(-4,-2)$.
13. Describe the relationship between the graph of $y=|x-4|+3$ and the graph of $y=|x|$ in terms of a vertical and a horizontal translation. Then find the vertex and graph $y=|x-4|+3$.

## \#14-15. Graph the absolute value inequality.

14. $y<|x-5|-3$
15. $y \leq|x+2|+4$
16. Find the vertex and graph the function $y=-5|x|+5$.

## Write an inequality for thê graph.

17. 


18.

19. Write an equation for the horizontal translation of $y=-|x|$.

20. Write the equation that is the translation of $y=|x-2|$ right 9 units and up 5 units.
21. Write the equation that is the translation of $y=|x-2|$ right 11 units and down 8 units.

Find the domain and range of each of the following absolute value functions - use both SET and INTERVAL notation.
22. $f(x)=|x-4|-1$
23. $g(x)=|x+5|+12$

## Spiral/Matrices

Find the values of the variables.
24. $\left[\begin{array}{cc}-4+t & 0 \\ 8 & 11\end{array}\right]=\left[\begin{array}{cc}-5 & 0 \\ 8 & 3 y+2\end{array}\right]$

Solve the matrix equation.
25. $\left[\begin{array}{cc}-9 & -7 \\ 1 & -2\end{array}\right]-X=\left[\begin{array}{cc}-6 & 4 \\ -2 & 5\end{array}\right]$
26. $\left[\begin{array}{cc}7 & -10 \\ 2 & -3\end{array}\right] X=\left[\begin{array}{c}5 \\ -6\end{array}\right]$
27. $\left[\begin{array}{cc}-9 & 31 \\ 2 & -7\end{array}\right] X=\left[\begin{array}{c}-6 \\ 0\end{array}\right]$

## Find the product.

28. $\left[\begin{array}{cc}1 & 8 \\ 1 & -2\end{array}\right]\left[\begin{array}{cc}9 & 8 \\ -2 & 7\end{array}\right]$

Evaluate the determinant of the matrix.
30. $\left[\begin{array}{ccc}-2 & 3 & 0 \\ -2 & 3 & -1 \\ 0 & 2 & -2\end{array}\right]$
29. $\left[\begin{array}{ll}-1 & -8 \\ -5 & -3\end{array}\right]\left[\begin{array}{cc}6 & -7 \\ -4 & -5\end{array}\right]$
31. $\left[\begin{array}{ccc}-2 & -3 & -3 \\ -3 & -3 & 0 \\ 3 & 0 & 3\end{array}\right]$

