Name_____ **Notes Video #6 A2 24- absolute value graphing**

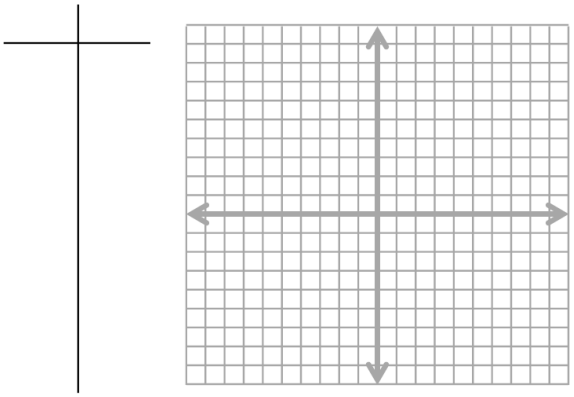
Absolute value- distance from origin (both directions).

Graph the absolute value function $f(x)=|x|$ using the domain $\{-8,-6,-4,\ldots,8\}$.

1. What type of function is this?

2. How would the graph change if you use the domain $(-\infty,\infty)$?
   Redraw the graph to display this.

3. What characteristics do you notice about the graph of $f(x)=|x|$?



This basic function and its graph are known as the _____.

The "elbow" point at (0, 0) is called the _____ .

Investigate: $f(x)=|x|+k$ using the domain $(-\infty,\infty)$

4. Redraw your parent function on this graph.
5. Use different colored pencils for each graph. On the same plane as your parent function create tables and graph: $p(x)=|x|+4$ $g(x)=|x|-10$ $m(x)=|x|-5$

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Investigate: $f(x)=a|x|$ where $a>0$ using the domain $(-\infty,\infty)$

8. Redraw your parent function on this graph.
9. Use different colored pencils for each graph. On the same plane as your parent function create tables and graph: $p(x)=\frac{1}{2}|x|$ $g(x)=3|x|$ $m(x)=\frac{5}{2}|x|$

Investigate: $f(x) = a|x|$ where $a < 0$ using the domain $(-\infty, \infty)$

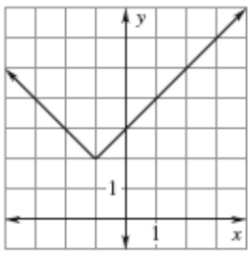
10. Redraw your parent function on this graph.
11. Use different colored pencils for each graph. On the same plane as your parent function create tables and graph: $p(x) = -|x|$ $g(x) = -4|x|$ $m(x) = -\frac{1}{3}|x|$

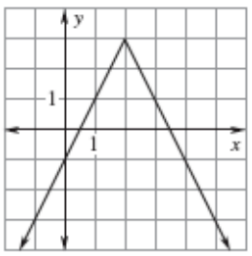
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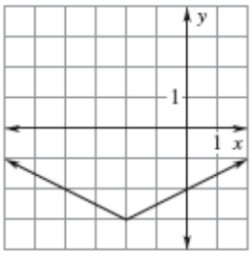
Investigate: $f(x) = |x - h|$ using the domain $(-\infty, \infty)$

14. Redraw your parent function on this graph.
15. Use different colored pencils for each graph. On the same plane as your parent function create tables and graph: $p(x) = |x + 2|$ $g(x) = |x - 5|$ $m(x) = |x - 8|$

Write the equation of the graph shown.

1. 

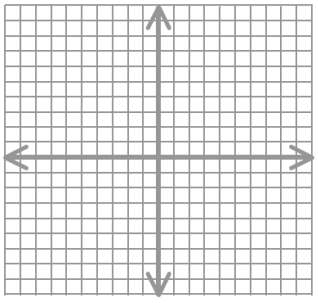
2. 

3. 

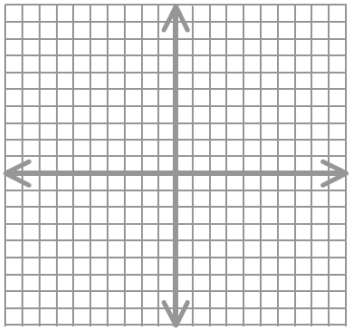
For #3 – 7 complete the following:

a) describe the transformation(s)
b) find the vertex
c) find the x- and y-intercepts
d) graph the function
e) find the domain and range

4. $y = -4|x+2|+2$



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



$g(x) = \frac{1}{2}|x-3|+2$

