

Day 33 – Absolute Value Functions (Transformations)
 p. 160-161 #'s 5-10 (Do not need to describe Domain/Range),
 19-26, 45, and 49

In Exercises 5–12, graph the function. Compare the graph to the graph of $f(x) = |x|$. Describe the domain and range. (See Examples 1 and 2.)

5. $d(x) = |x| - 4$

6. $r(x) = |x| + 5$

7. $m(x) = |x + 1|$

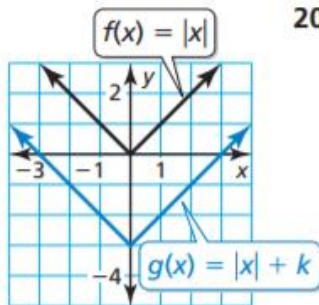
8. $v(x) = |x - 3|$

9. $p(x) = \frac{1}{3}|x|$

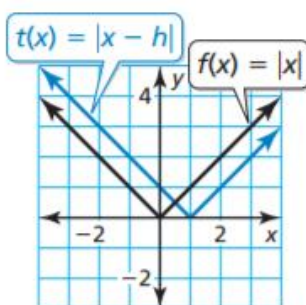
10. $j(x) = 3|x|$

In Exercises 19–22, compare the graphs. Find the value of h , k , or a .

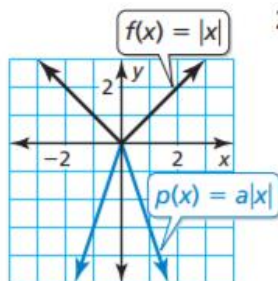
19.



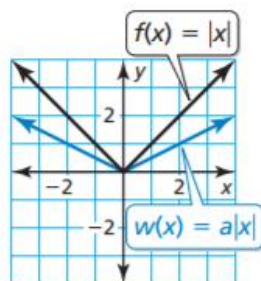
20.



21.



22.



In Exercises 23–26, write an equation that represents the given transformation(s) of the graph of $g(x) = |x|$.

23. vertical translation 7 units down

24. horizontal translation 10 units left

25. vertical shrink by a factor of $\frac{1}{4}$

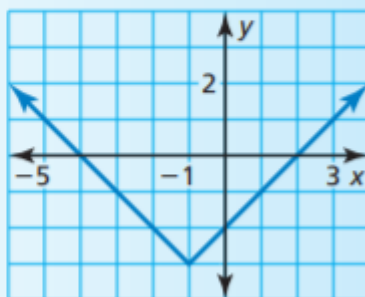
26. vertical stretch by a factor of 3 and a reflection in the x -axis

ERROR ANALYSIS In Exercises 45 and 46, describe and correct the error in graphing the function.

45.



$$y = |x - 1| - 3$$



49. **WRITING** Compare the graphs of $p(x) = |x - 6|$ and $q(x) = |x| - 6$.