

Perform each transformation on $f(x) = 2|x| + 3$. Write the transformed function $g(x)$.

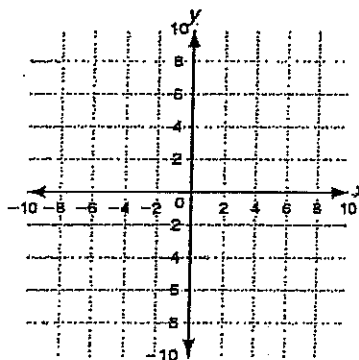
1. down 7 units 2. reflect across y-axis 3. left 5 units

Translate $f(x) = |x|$ so that the vertex is at the given point. Write the transformed function $g(x)$.

4. $(6, -3)$ 5. $(-8, -1)$ 6. $(-7, 2)$

Perform the transformation. Then graph.

7. Given $f(x) = 3|x - 6|$. Name the two transformations that are occurring for the parent function $|x|$? Then graph it.



With a different colored pen/pencil compress $f(x)$ vertically by a factor of $\frac{1}{3}$.

State the transformation that maps the graph of $f(x) = |x|$ onto the graph of each function.

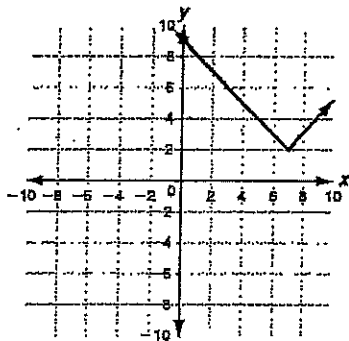
8. $g(x) = |x + 2|$ 9. $g(x) = -2|x|$ 10. $g(x) = 4|x - 5| + 3$

Find the vertex of the graph of each function.

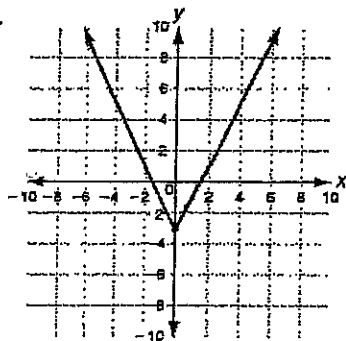
11. $g(x) = |x - 3| + 7$ 12. $g(x) = -4 + |x|$ 13. $g(x) = |x + 8| - 1$

Find an absolute-value function for each graph. Identify domain + range.

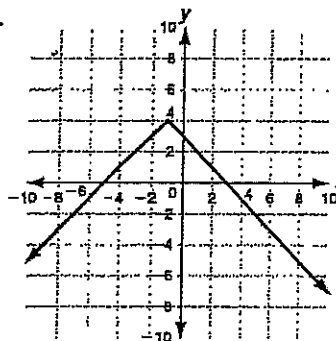
14.



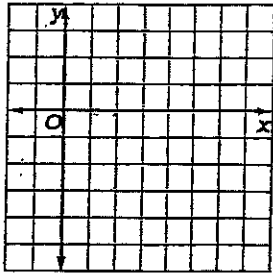
15.



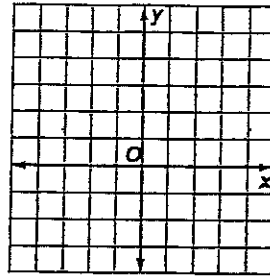
16.



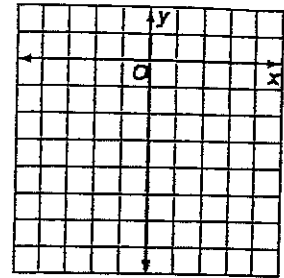
$$y+4 \leq |x-3|$$



$$1. y > |x| - 1$$



$$2. y > -3|x+1| - 2$$



Solve each system of equations.

$$\begin{aligned} 8x + 3y &= -5 \\ 10x + 6y &= -13 \end{aligned}$$

$$\begin{aligned} 0.5x + 2y &= 5 \\ x - 2y &= -8 \end{aligned}$$

$$\begin{aligned} 5x + 9y + z &= 20 \\ 2x - y - z &= -21 \\ 5x + 2y + 2z &= -21 \end{aligned}$$