

List the steps needed to graph the transformed function. Remember, work left to right!

1. $y = 3|x + 7| - 1$

1. vertical stretch 3
2. left 7
3. down 1

2. $y = (x - 4)^2 + 5$

1. right 4
2. up 5

3. $y = -3\sqrt{\frac{1}{6}(x+1)} - 8$

1. reflect over x
2. vert. stretch by 3
3. horiz. stretch 6
4. left 1
down 8

4. $y = \frac{1}{4}\sqrt{2(x-3)} - 9$

1. vert. comp. $\frac{1}{4}$
2. horiz. comp. $\frac{1}{2}$
3. right 3
4. down 9

5. $y = \frac{1}{5}|-x| + 4$

1. vert. comp. $\frac{1}{5}$
2. reflect over y
3. up 4
4. _____

6. $y = 3|2x + 10| - 4 = 3|2(x+5)| - 4$

1. vert. stretch 3
2. horiz. comp. $\frac{1}{2}$
3. left 5
4. down 4

List the steps needed in the correct order to graph: $-3f(2(x+2)) - 7$

Rewrite: $-3f(2(x+2)) - 7$

Is a reflection over the x axis or y axis needed to graph f(x)? If so, which one? X-axis

Is there a vertical stretch or compression needed? If so, which one. stretch By what factor? 3

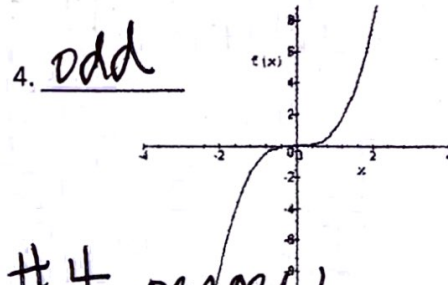
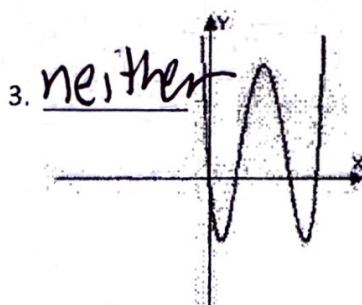
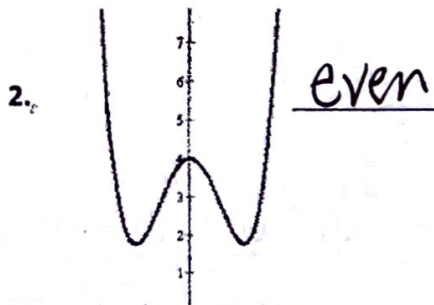
$2 \rightarrow \frac{1}{2} < 1$

Is there a horizontal stretch or compression needed? If so, which one. comp. By what factor? $\frac{1}{2}$

Is there a horizontal translation needed (yes/no)? yes If so, which direction (left or right)? left 2

Is there a vertical translation needed (yes/no)? yes If so, which direction (up or down)? down 7

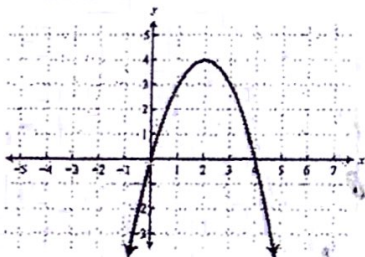
State whether each graph is even, odd, or neither.



In #2-4, which graph(s) represent a one-to-one function? Explain.

#4, passes both vertical & horizontal line test

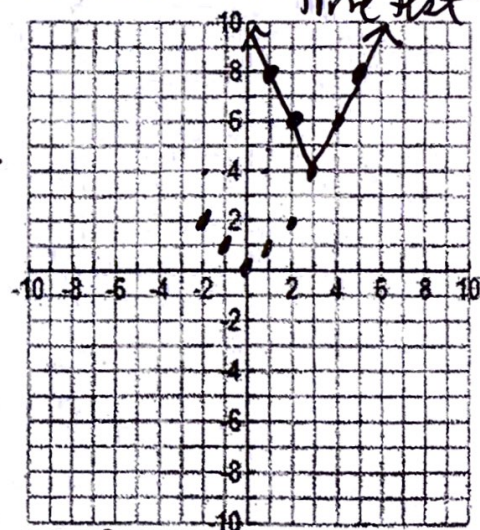
5. Find the domain and range.



Domain: $(-\infty, \infty)$ Range: $(-\infty, 4]$

6. Graph $y = 2|x - 3| + 4$ using transformations.

$y = |x|$
- vert. stretch 2
- right 3, up 4



Domain: $(-\infty, \infty)$

Range: $[4, \infty)$

Function? yes

One-to-one? no

7. Solve and Graph.

$| -2x - 3 | \leq 9$

$-2x - 3 \leq 9$
 $+3 \quad +3$

$\frac{-2x \leq 12}{-2}$

$x \geq -6$ and

and

$-2x - 3 \geq -9$
 $+3 \quad +3$

$\frac{-2x \geq -6}{-2}$

$x \leq 3$