

Graphing Equations: Transformations

(KEY)

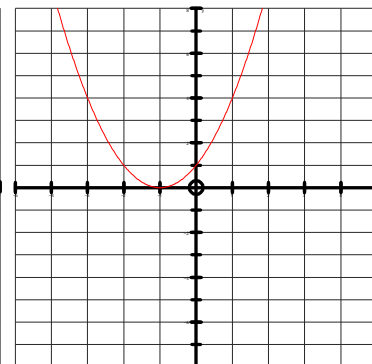
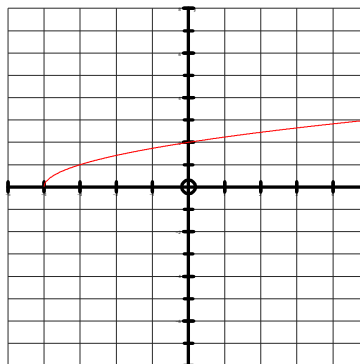
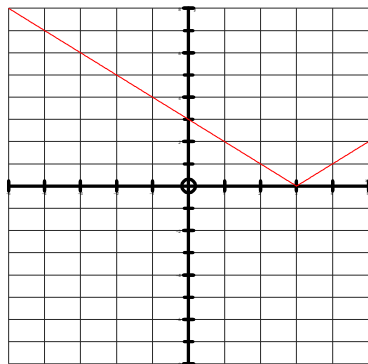
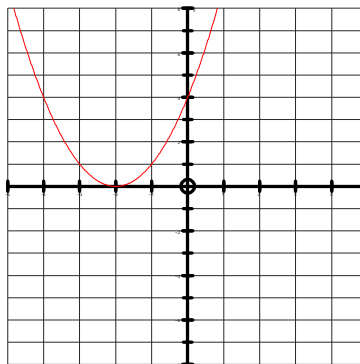
Graph the following equations with their parent graphs. Describe the transformation beneath each graph.

1) $y = (x + 2)^2$

2) $y = |x - 3|$

3) $y = \sqrt{x + 4}$

4) $y = (-x - 1)^2$



H: Left 2

R:

V:

W/N:

H: Right 3

R:

V:

W/N:

H: Left 4

R:

V:

W/N:

H: Right 1

R: Horiz. Refl.

V:

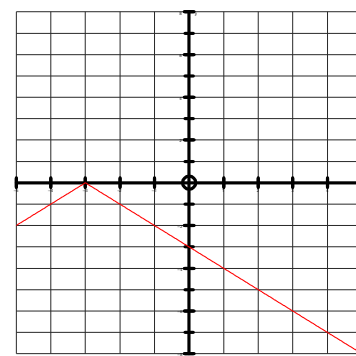
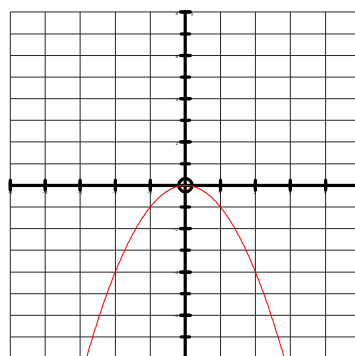
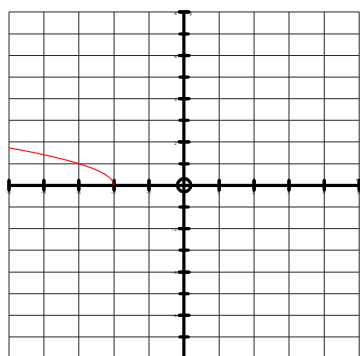
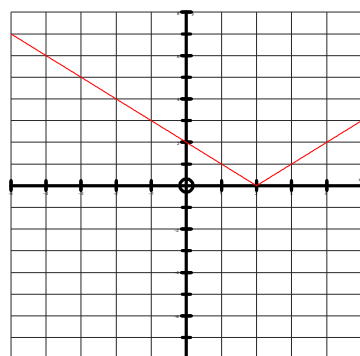
W/N:

5) $y = |-x + 2|$

6) $y = \sqrt{-x - 2}$

7) $y = -x^2$

8) $y = -|x + 3|$



H: Left 2

R: Horiz. Refl.

V:

W/N:

H: Right 2

R: Horiz. Refl.

V:

W/N:

H:

R: Refl. Down

V:

W/N:

H: Left 3

R: Refl. Down

V:

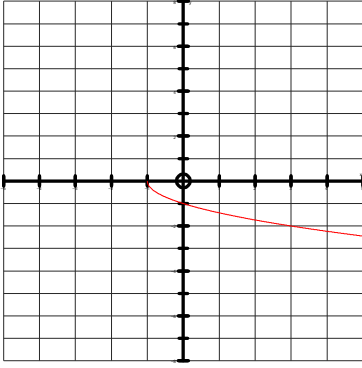
W/N:

9) $y = -\sqrt{x+1}$

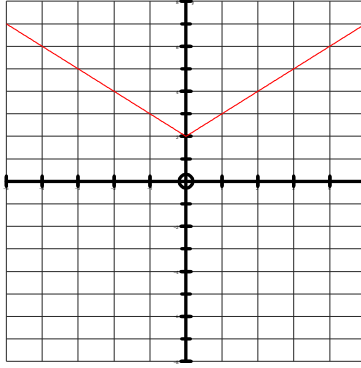
10) $y = |x| + 2$

11) $y = -\sqrt{x} - 2$

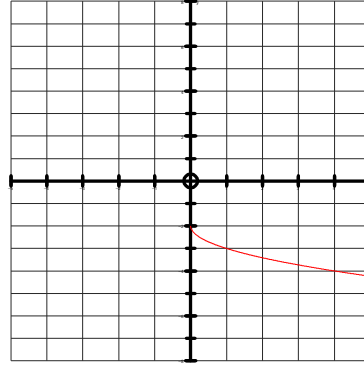
12) $y = (x - 2)^2 - 3$



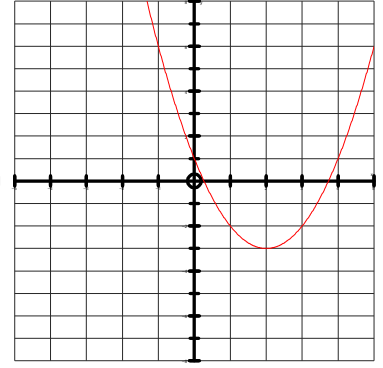
H: Left 1
R: Refl. Down
V:
W/N:



H:
R:
V: Up 2
W/N:



H:
R: Refl. Down
V: Down 2
W/N:



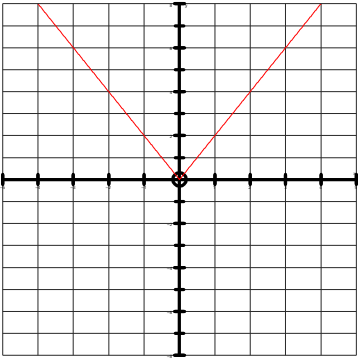
H: Right 2
R:
V: Down 3
W/N:

13) $y = 2|x|$

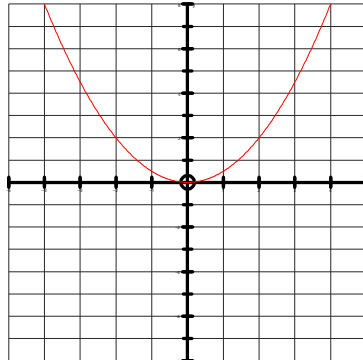
14) $y = \frac{1}{2}x^2$

15) $y = 3\sqrt{x}$

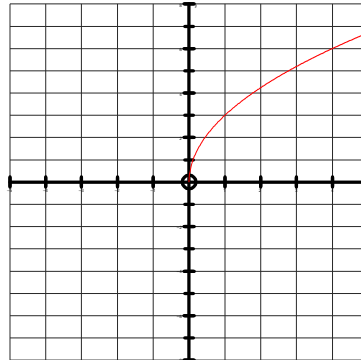
16) $y = 2x^2 - 3$



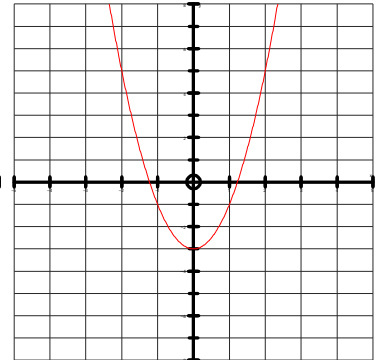
H:
R:
V:
W/N: Up 2x



H:
R:
V:
W/N: Up 1/2x



H:
R:
V:
W/N: Up 3x



H:
R:
V: Down 3
W/N: Up 2x

Given the graph of an equation, identify the parent equation, describe the transformations, and write the equation.

17) $y = |x|$

18) $y = |x|$

19) $y = |x|$

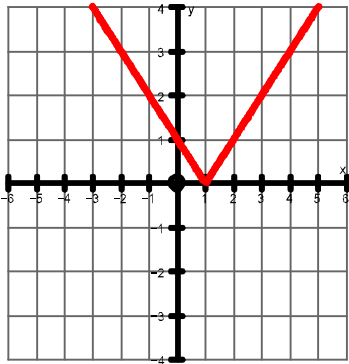
20) $y = |x|$

$y = |x - 1|$

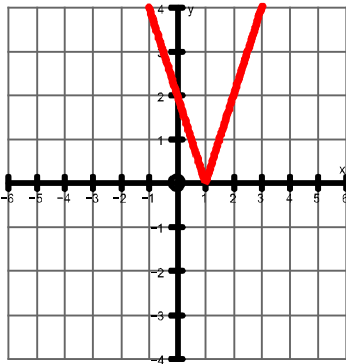
$y = 2|x - 1|$

$y = -2|x - 1|$

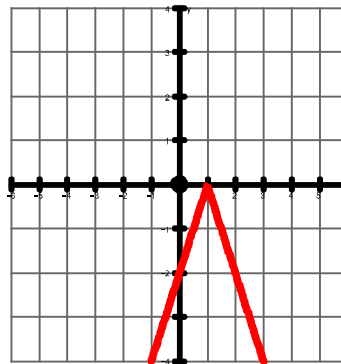
$y = -2|x - 1| - 3$



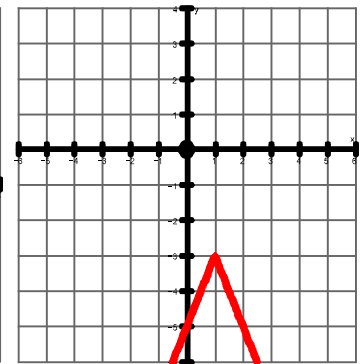
H: Right 1
R:
V:
W/N:



H: Right 1
R:
V:
W/N: Up 2x



H: Right 1
R: Refl. Down
V:
W/N: Up 2x



H: Right 1
R: Refl. Down
V: Down 3
W/N: Up 2x

21) $y = \sqrt{x}$

22) $y = \sqrt{x}$

23) $y = \sqrt{x}$

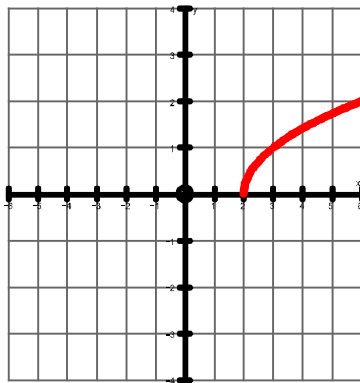
24) $y = \sqrt{x}$

$y = \sqrt{x - 2}$

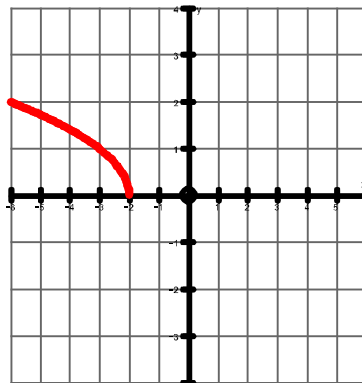
$y = \sqrt{-x - 2}$

$y = -\sqrt{-x - 2}$

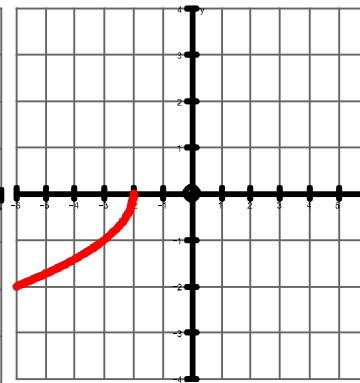
$y = -\sqrt{-x - 2} + 2$



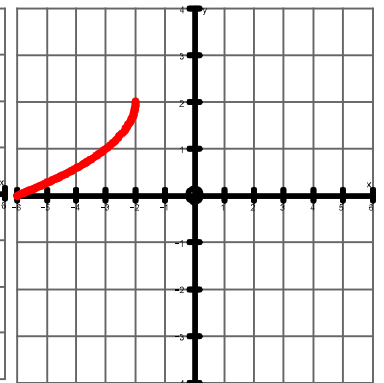
H: Right 2
R:
V:
W/N:



H: Right 2
R: Horiz. Refl.
V:
W/N:



H: Right 2
R: Horiz. Refl.
Refl. Down
V:
W/N:



H: Right 2
R: Horiz. Refl.
Refl. Down
V: Up 2
W/N: