

27a) $h(x + 5) - 1 = |x + 5| - 1$ 27b) shifts left 5, down 1
the +5 goes inside the absolute value since it is inside the parenthesis, the -1 goes after since it is not in the parenthesis

29a) $g(x - 2) + 1 = \sqrt{x - 2} + 1$ 29b) shifts right 2 up 1
put -2 under the square root since it is inside the parenthesis, the +1 goes after the square root since it is not in a parenthesis

31a) $g(x - 5) - 1 = \sqrt{x - 5} - 1$ 31b) shifts right 5 down 1
the -5 goes under the square root since it is inside the parenthesis, the -1 goes after since it is not in the parenthesis

33a) $-k(x) = -\sqrt[3]{x}$ 33b) reflects over x-axis
the negative goes in front since it is not in the parenthesis

35a) $-h(x) = -|x|$ 35b) reflects over x-axis
the negative goes in front since it is not in the parenthesis

37a) $k(-x) = \sqrt[3]{-x}$ 37b) reflects over y-axis
the negative goes under the cubed root since it is inside the parenthesis

39a) $h(-x) = |-x|$ or just $|x|$ 39b) reflects over y-axis
the negative goes inside the absolute value since it is inside the parenthesis

41a) $-f(x + 2) + 1 = -(x + 2)^2 + 1$ 41b) reflects over x-axis, shifts left 2 and up 1
the negative goes in front of the parenthesis since it is not inside the parenthesis, the +2 belongs inside the parenthesis since it is in the parenthesis, the +1 goes after since it is not in the parenthesis

43a) $-f(x + 5) - 1 = -(x + 5)^2 - 1$ 43b) reflects over x-axis, shifts left 5 and down 1
the negative goes in front of the parenthesis since it is not inside the parenthesis, the +5 belongs inside the parenthesis since it is in the parenthesis, the -1 goes after since it is not in the parenthesis

45a) $-m(x - 2) + 1 = -(x - 2)^3 + 1$ 45b) reflects over x-axis, shifts right 2, up 1
the negative goes in front of the parenthesis since it is not inside the parenthesis, the -2 belongs inside the parenthesis since it is in the parenthesis, the +1 goes after since it is not in the parenthesis

47a) $-m(x - 5) - 1 = -(x - 5)^3 - 1$ 47b) reflects over x-axis, shifts right 5, down 1
the negative goes in front of the parenthesis since it is not inside the parenthesis, the -5 belongs inside the parenthesis since it is in the parenthesis, the -1 goes after since it is not in the parenthesis

49a) $2f(x) = 2x^2$ 49b) stretches
the 2 goes in front since it is not in a parenthesis
numbers greater than 1 multiplied by a function stretch the graph

53a) $\frac{1}{2}h(x) = \frac{1}{2}|x|$

53b) compresses

the $\frac{1}{2}$ goes in front of the absolute value since it is not in the parenthesis

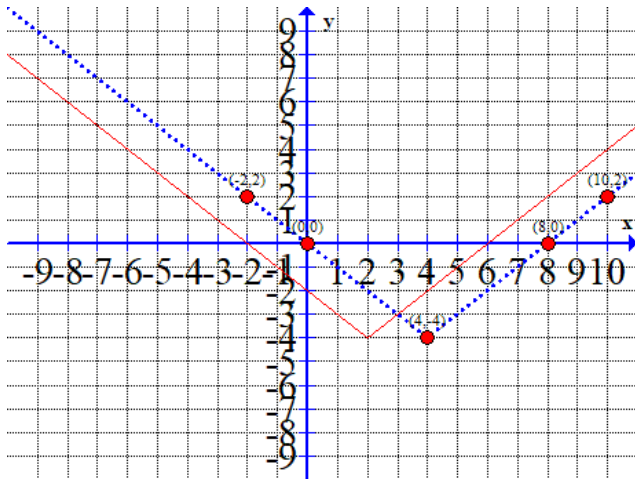
55a) $-\frac{1}{2}h(x) = -\frac{1}{2}|x|$

55b) reflects over x axis, and compresses

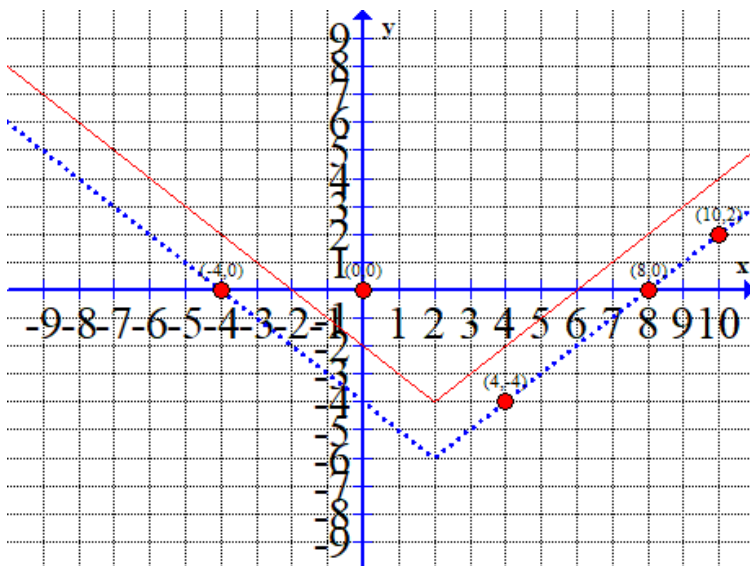
the $-\frac{1}{2}$ goes in front since it is not in the parenthesis

fractions between 0 and 1 compress, negative numbers reflect over x-axis

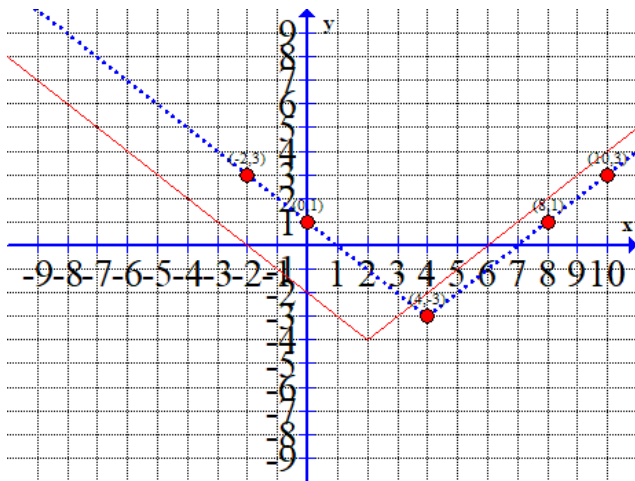
57) $f(x - 2)$ (shift each point 2 to the right)



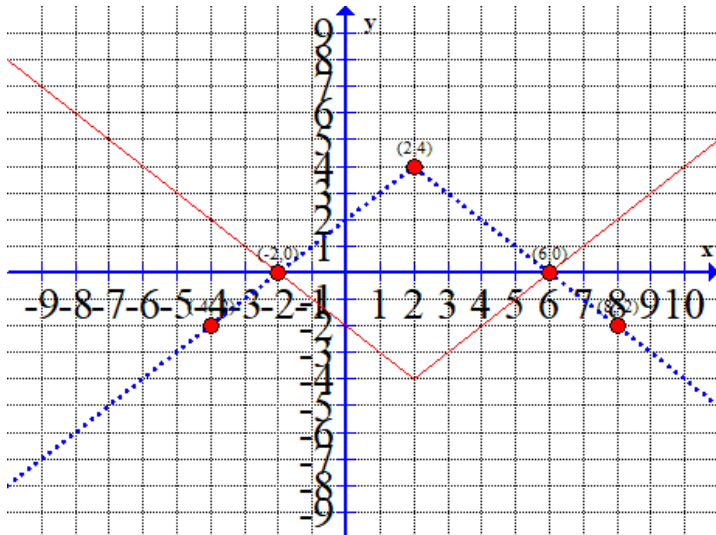
59) $f(x) - 2$ shift each point down 2



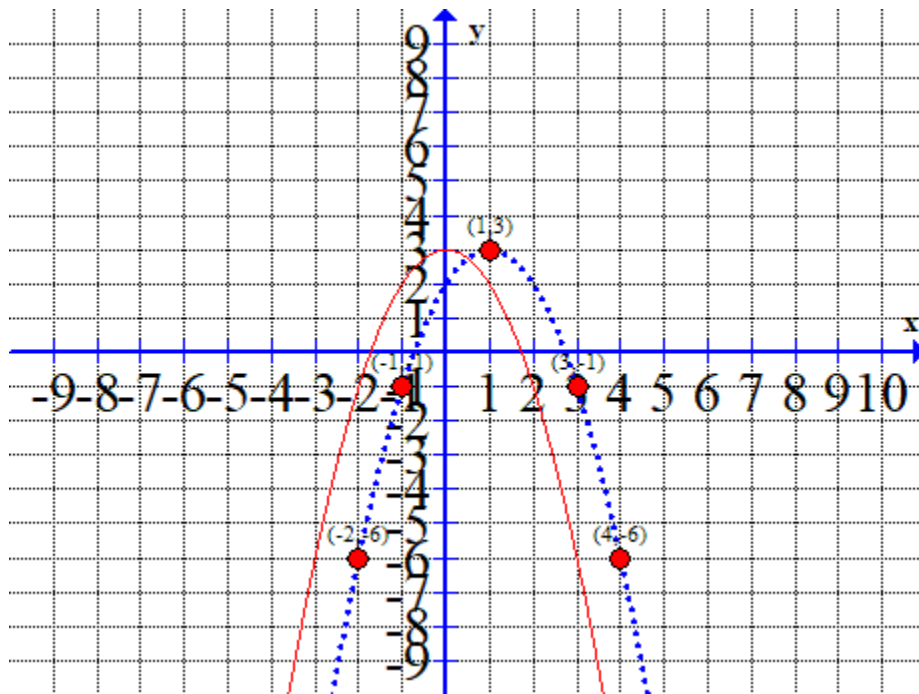
61) $f(x-2) + 1$ shift each point right 2 and up 1



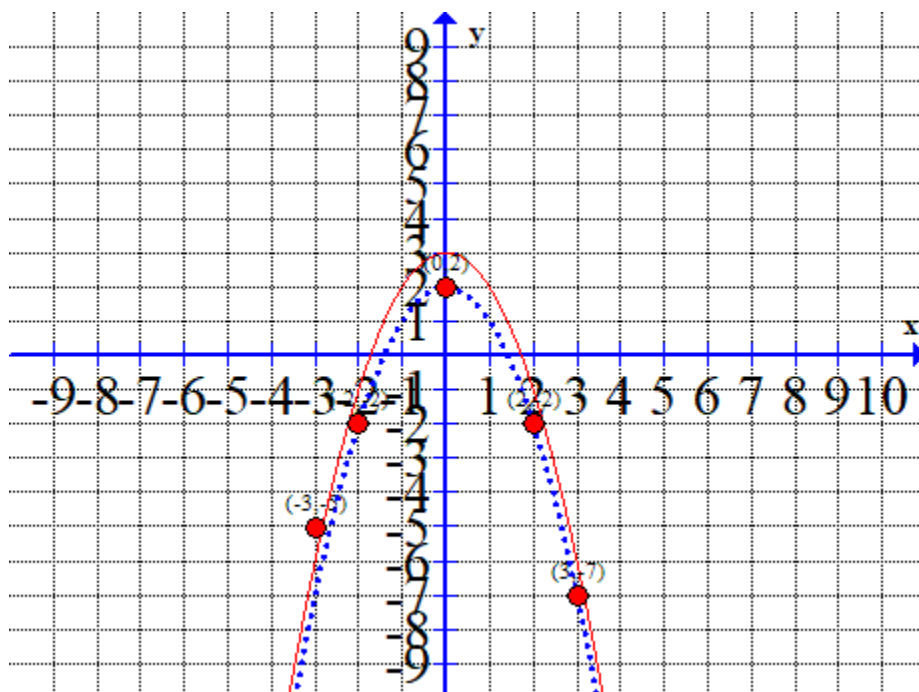
63) $-f(x)$ reflect over x-axis by changing y-coordinate of each point



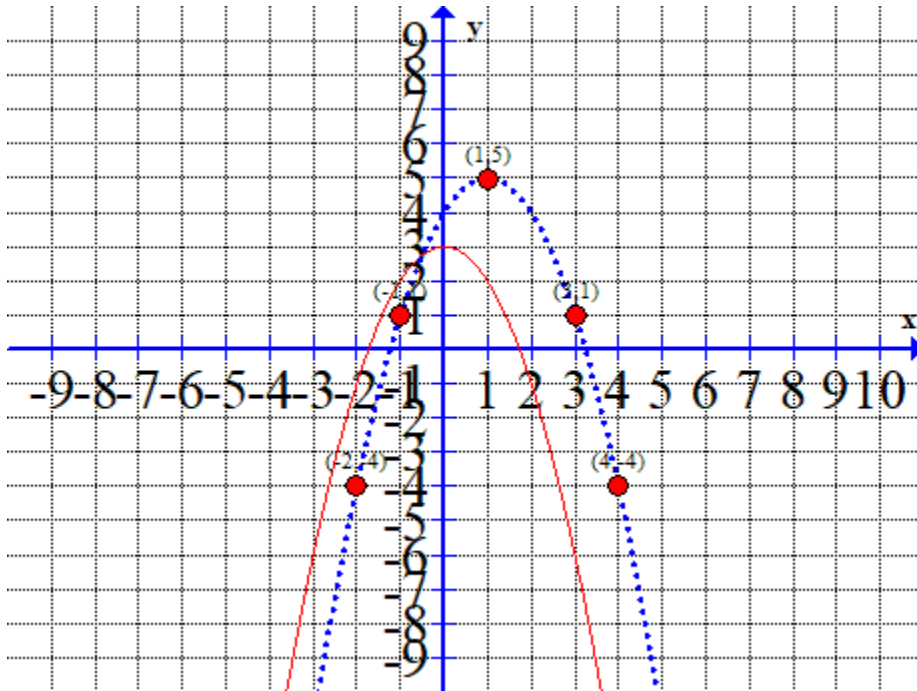
65) $f(x - 1)$ shift each point to the right 1



67) $f(x) - 1$ shift each point down 1



69) $f(x - 1) + 2$ shift each point 1 to the right and up 2



71) $f(-x)$ reflect over y-axis by changing the sign of each x

This will give you the original graph back. The original graph is symmetric to the y-axis, so reflecting the graph over the y-axis produces the original graph again.

