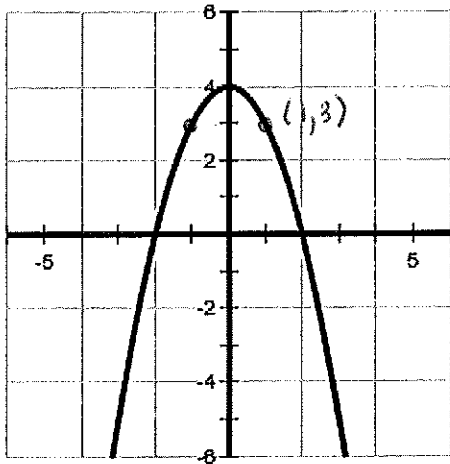


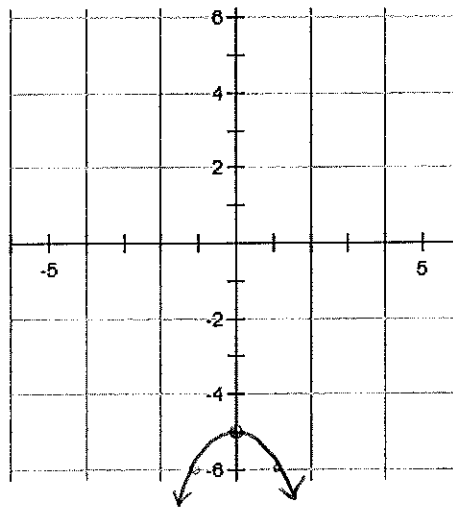
Directions: After completing the first section for each function it is now time to practice what you have discovered. Given following information about the function, state the equation and description of the graph. Finally, write a description of the linear transformation that has taken place.

PART 1: Quadratic Function



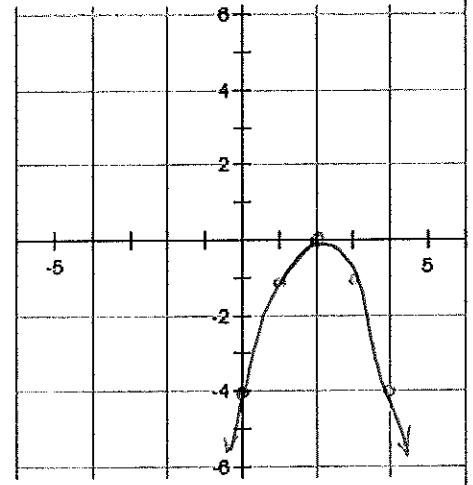
Equation: $y = -(x)^2 + 4$

Description: A quadratic function reflected over the x-axis and shifted up 4 units.



Equation: $f(x) = -1(x)^2 - 5$

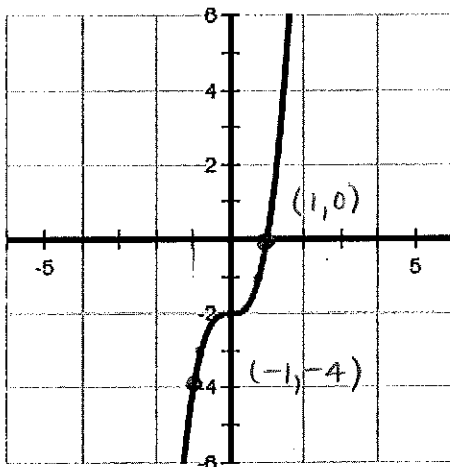
Description: A quadratic function reflected over the x-axis and shifted down 5



Equation: $y = -(x-2)^2$

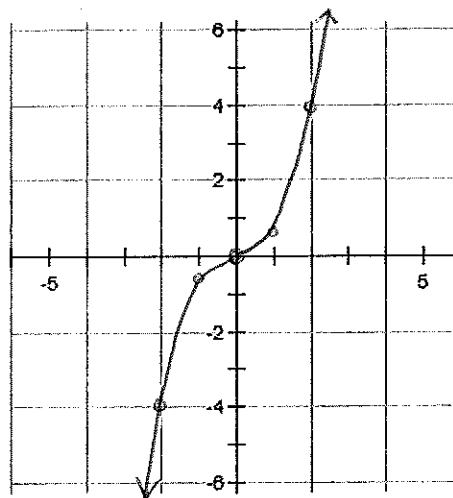
Description: A quadratic function shifted horizontally to the right 2 units and reflected over the x-axis.

PART 2: Cubic Function



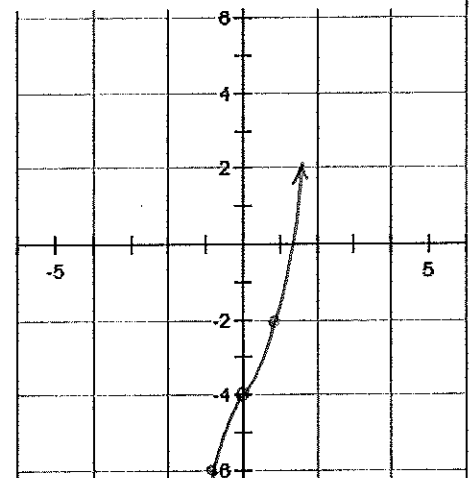
Equation: $y = 2x^3 - 2$

Description: A cubic function shifted down 2 and increasing on the y-axis faster (vertical stretch) by a factor of 2



Equation: $f(x) = \frac{1}{2}(x)^3$

Description: A cubic function increasing slower on the y-axis (vertical shrink) by a factor of 2.

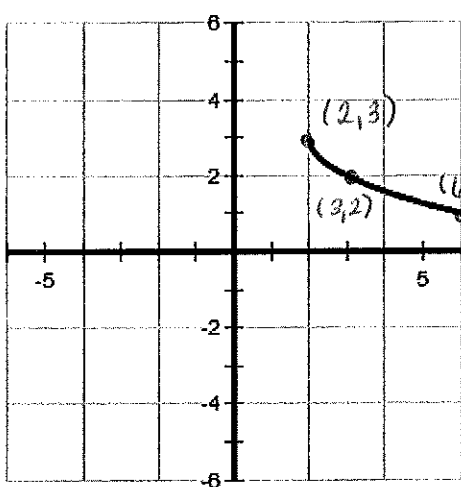


Equation: $y = 2x^3 - 4$

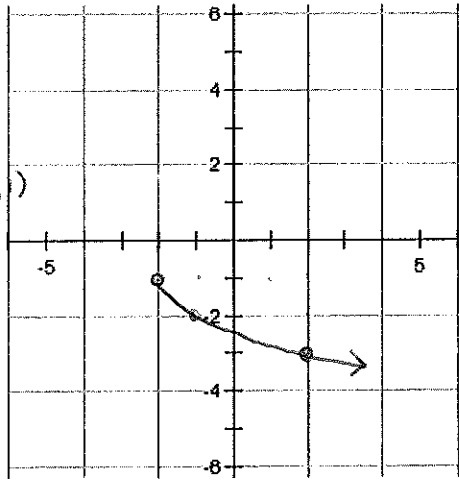
Description: A cubic function shifted vertically down 4 units and increasing faster (on the y-axis) by a scale factor of 2.

Directions: After completing the first section for each function it is now time to practice what you have discovered. Given following information about the function, state the equation and description of the graph. Finally, write a description of the linear transformation that has taken place.

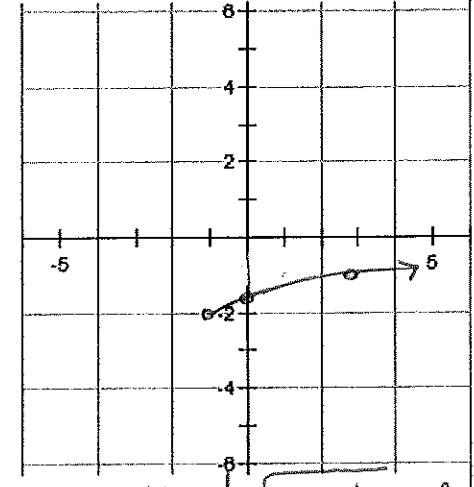
PART 3: Square Root Function



Equation: $y = -\sqrt{x-2} + 3$
 Description: A square root function reflected over the x-axis and shifted up 3 units and right 2 units.

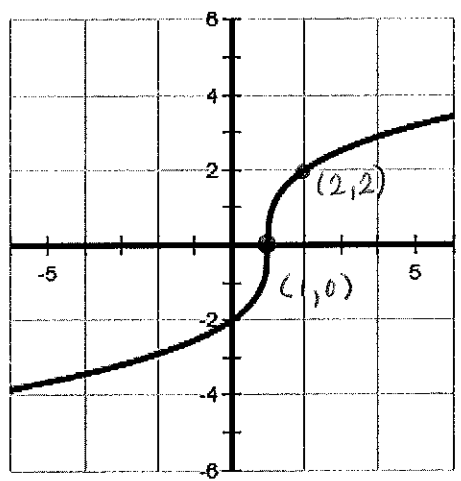


Equation: $f(x) = -(x+2)^{1/2} - 1$
 Description: A square root function reflected over the x-axis and shifted left 2 units and down 1.

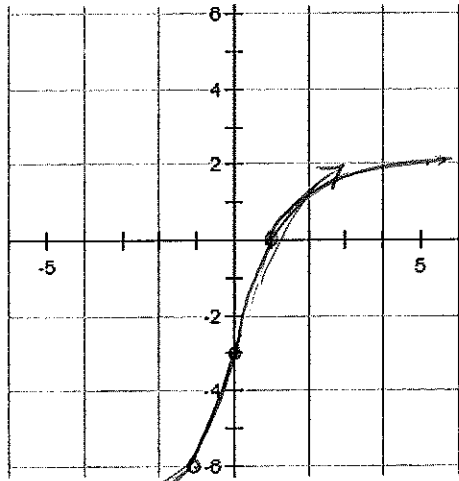


Equation: $y = \frac{1}{2}\sqrt{x+1} - 2$
 Description: A square root function shifted vertically down 2 units and shifted horizontally left 1 unit and increasing slower by a factor of 2.

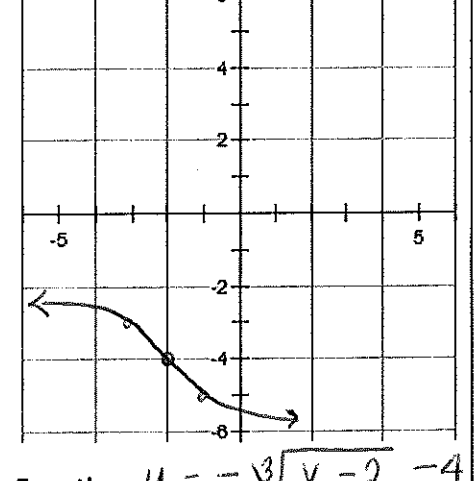
PART 4: Cube Root Function



Equation: $y = 2\sqrt[3]{x-1}$
 Description: A cube root function shifted right 1 unit and increasing faster on the y-axis by a factor of 2 (vertical stretch).



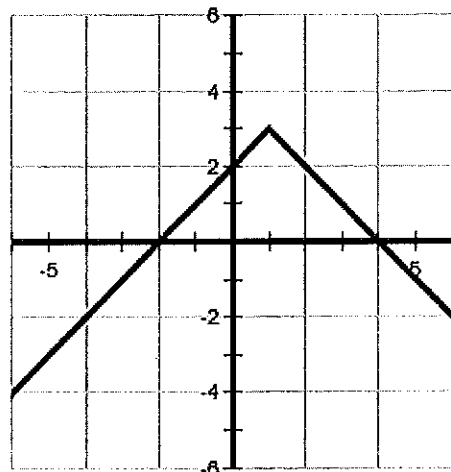
Equation: $f(x) = 3(x)^{1/3} - 3$
 Description: A cube root function shifted down 3 units and increasing faster on the y-axis (by a factor of 3) (vertical stretch).



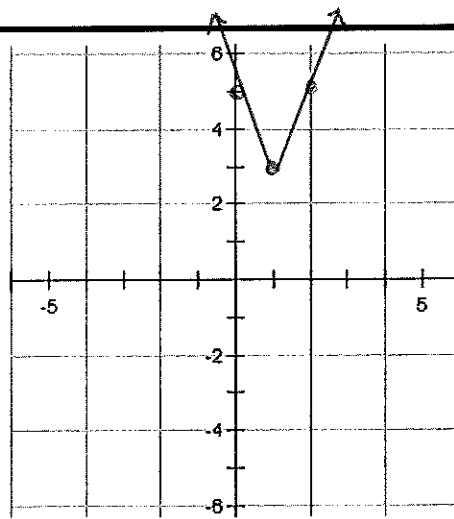
Equation: $y = -\sqrt[3]{x-2} - 4$
 Description: A cube root function shifted horizontally to the right 2 units and shifted vertically down 4 units and reflected over the x-axis.

Directions: After completing the first section for each function it is now time to practice what you have discovered. Given following information about the function, state the equation and description of the graph. Finally, write a description of the linear transformation that has taken place.

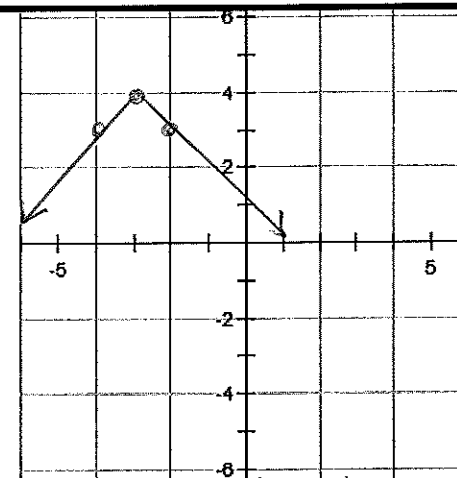
PART 5: Absolute Value Function



Equation: $y = -|x-1| + 3$
 Description: An absolute value function shifted up 3 units and right 1 unit

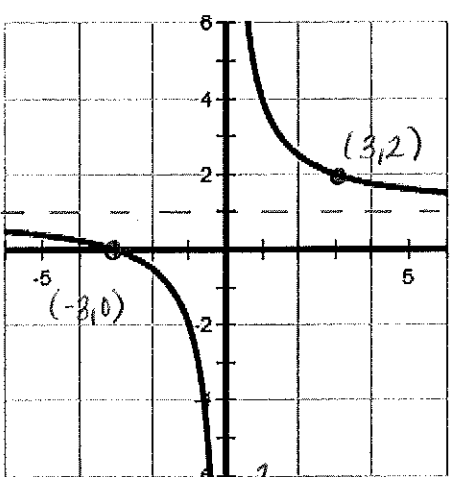


Equation: $f(x) = 2|x-1| + 3$
 Description: An absolute value function shifted right 1 and up 3 and increases faster up the y-axis by a factor of 2 (vertical stretch).

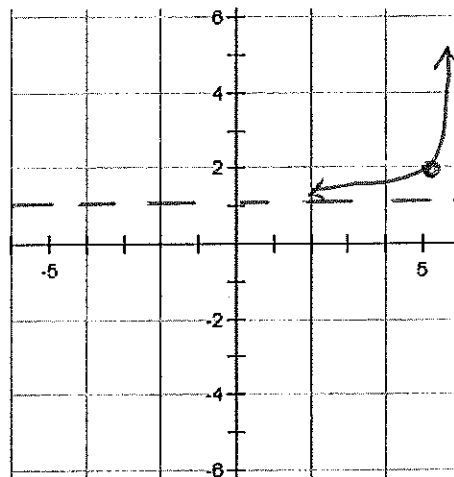


Equation: $y = -|x+3| + 4$
 Description: An absolute value function shifted vertically up 4 units and shifted horizontally to the left 3 units and reflected over the x-axis.

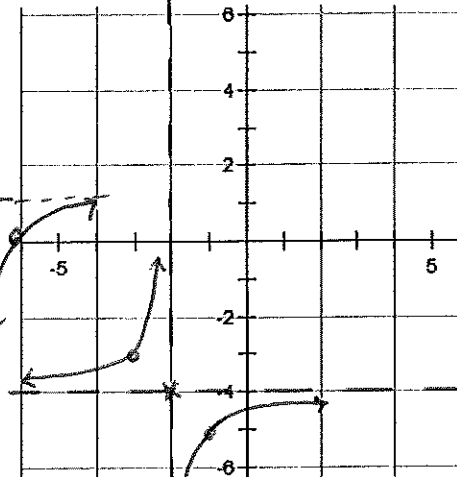
PART 6: Reciprocal Function



Equation: $y = \frac{3}{x} + 1$
 Description: A reciprocal function shifted up 1 unit and increases faster by a factor of 3
 $f(x) = A(x)^{-1} + 1$ (vertical stretch)



Equation: $f(x) = -1(x-6)^{-1} + 1$
 Description: A reciprocal function shifted up 1 and right 6. Also reflected over the x-axis



Equation: $y = \frac{1}{x+2} - 4$
 Description: An reciprocal function shifted horizontally to the left 2 units and shifted vertically down 4 units.

$2 = A(8)^{-1} + 1$ @ $1 = \frac{A}{3}$ $A = 3$