

What you'll Learn About

$(-\infty, 1) \cup (1, \infty)$

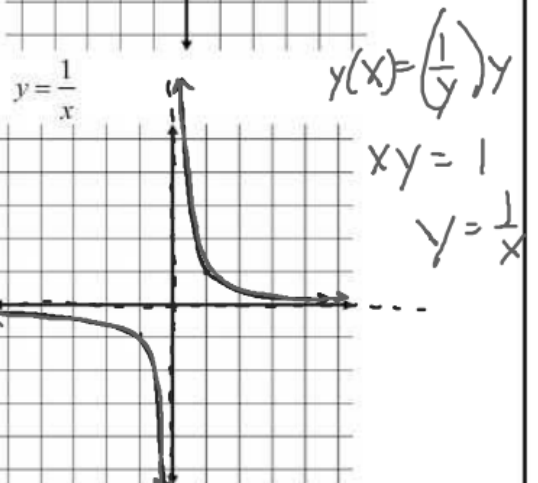
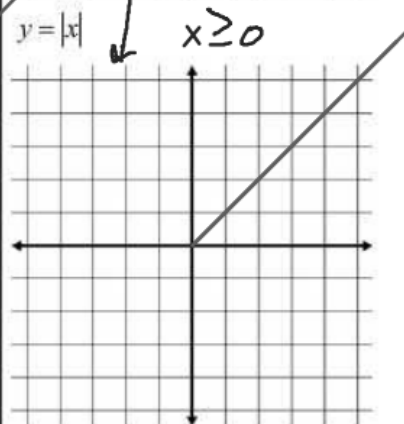
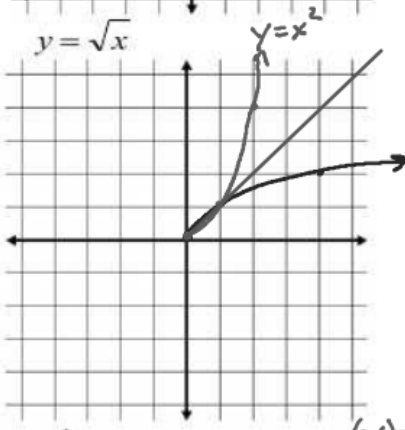
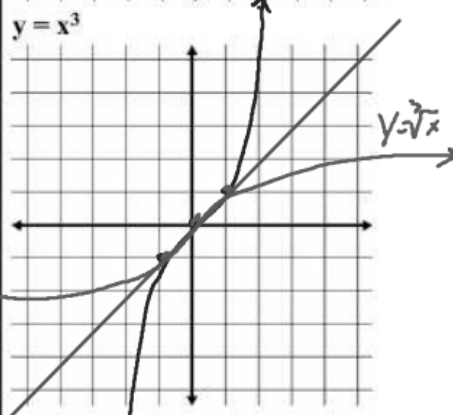
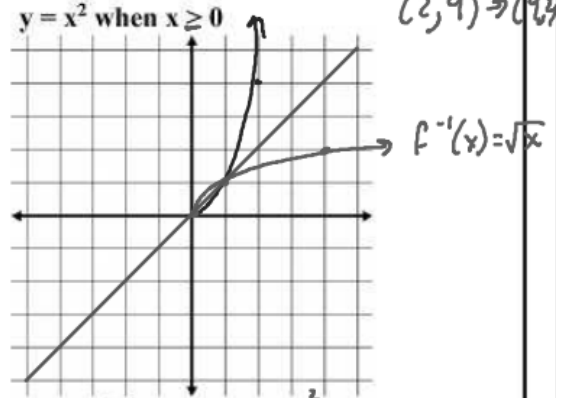
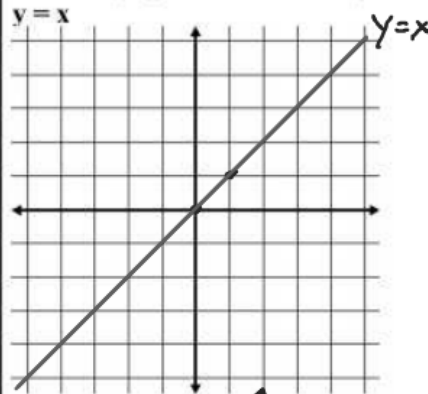
-2 -8

x	y
-1	-1
0	0
1	1
2	8

Inverse

x	y
-1	-1
0	0
1	1
8	2

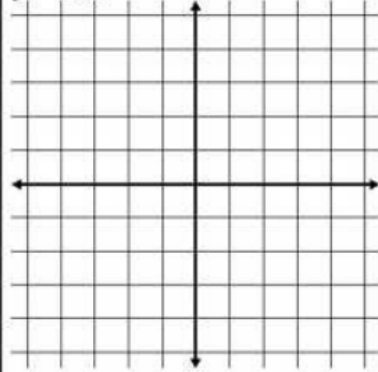
Sketch a graph of the following functions and their inverses



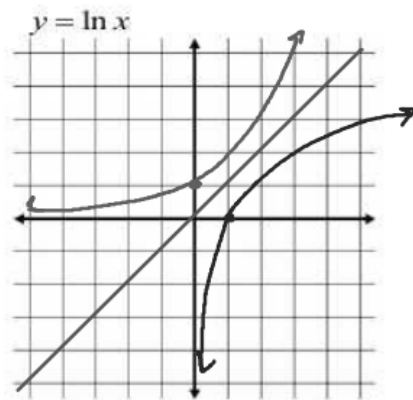
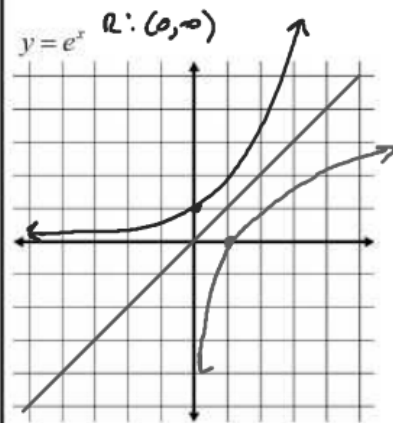
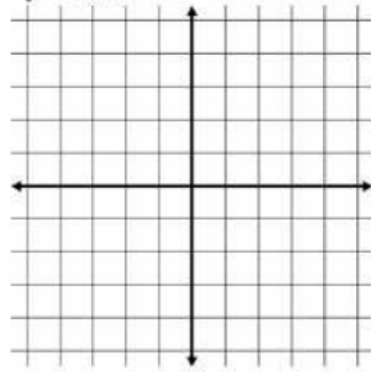
$(2, 4) \rightarrow (4, 2)$

Sketch a graph of the following functions and their inverses

$y = \sin x$



$y = \cos x$



$D: (0, \infty)$

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

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

$R: (0, \infty)$

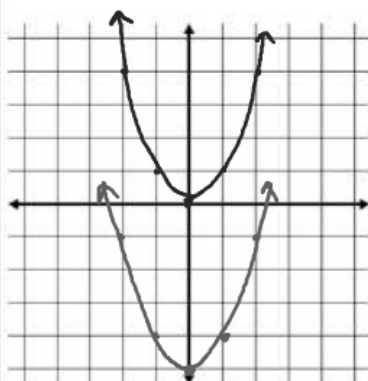
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What you'll Learn About

Describe how the graph of $y = x^2$ can be transformed to the graph of the given equation.

A) $y = x^2 - 5$

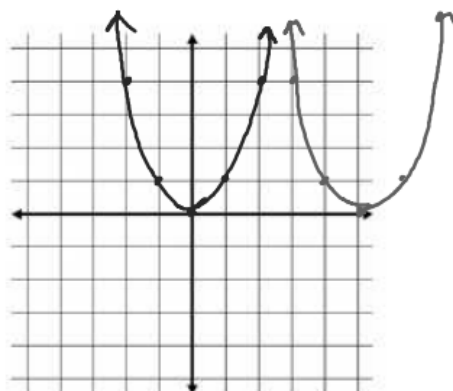
Down 5



B) $y = (x - 5)^2$

Shift Rt. 5

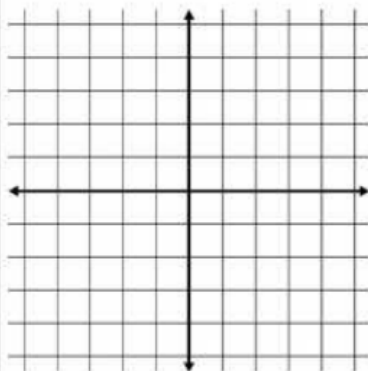
$x - 5 = 0$
 $x = 5$



C) $y = (x + 2)^2 - 3$

Lt 2

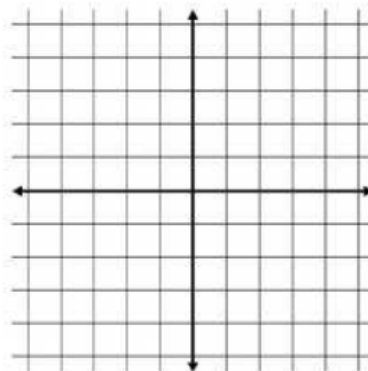
Down 3



D) $y = (x - 2)^2 + 3$

Rt 2

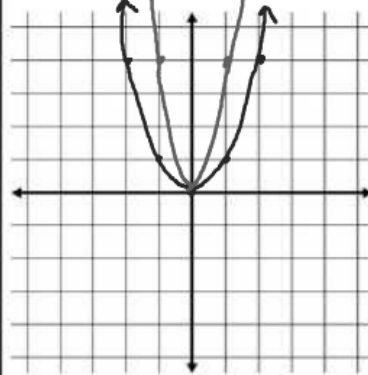
Up 3



Describe how the graph of $y = x^2$ can be transformed to the graph of the given equation.

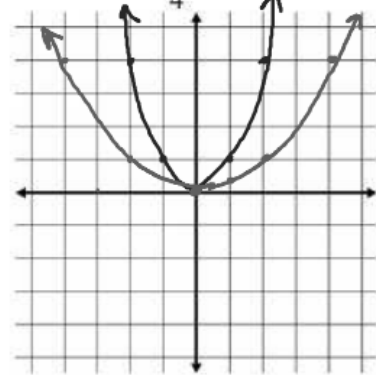
Vertical Stretch by factor of 4

E) $y = 4x^2$



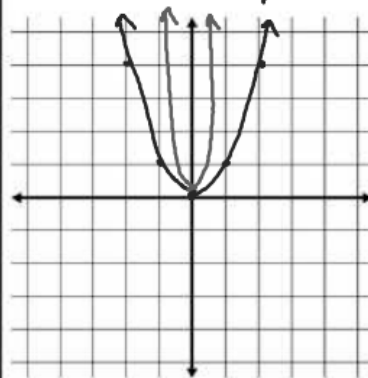
F) $y = \frac{1}{4}x^2$

Vertical Compression by factor of $\frac{1}{4}$



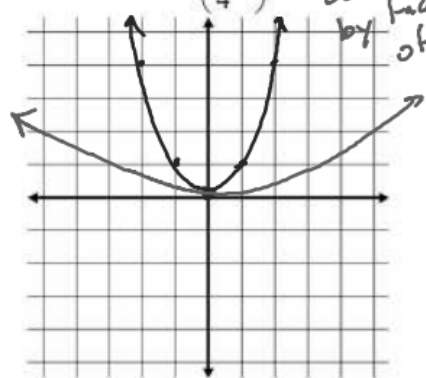
E) $y = (4x)^2$

Horizontal Compression by factor $\frac{1}{4}$



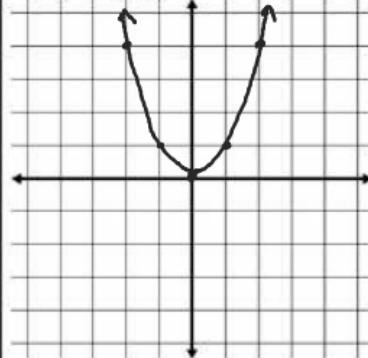
F) $y = \left(\frac{1}{4}x\right)^2$

Horizontal Stretch by factor of 4



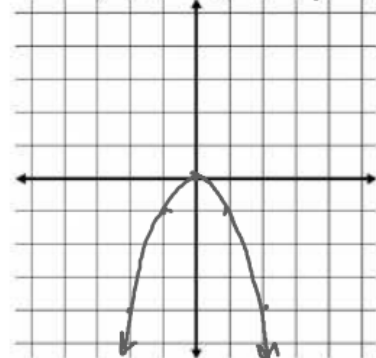
E) $y = (-x)^2$

Reflection over y-axis



F) $y = -(x)^2$

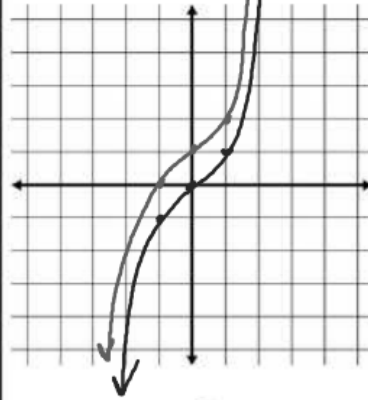
Reflection over x-axis



Describe how the graph of $y = x^3$ can be transformed to the graph of the given equation.

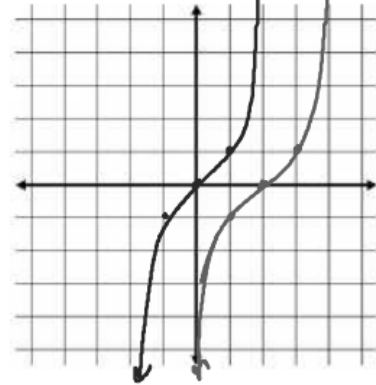
A) $y = x^3 + 1$

Shift up 1



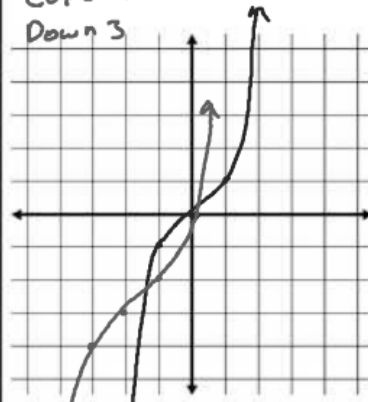
B) $y = (x - 2)^3$

Right 2



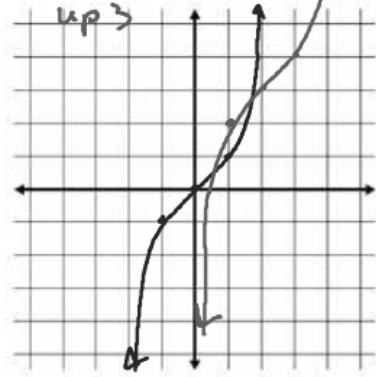
C) $y = (x + 2)^3 - 3$

Left 2
Down 3



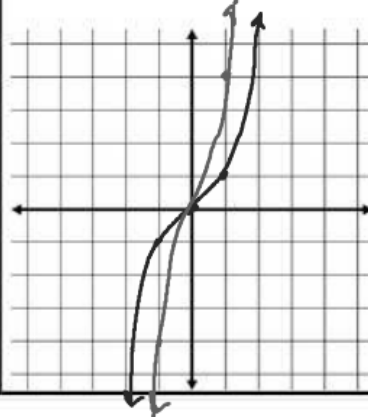
D) $y = (x - 2)^3 + 3$

Right 2
Up 3



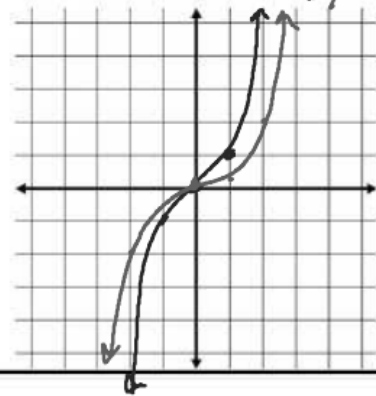
E) $y = 4x^3$

Vertical Stretch
by factor 4



F) $y = \frac{1}{4}x^3$

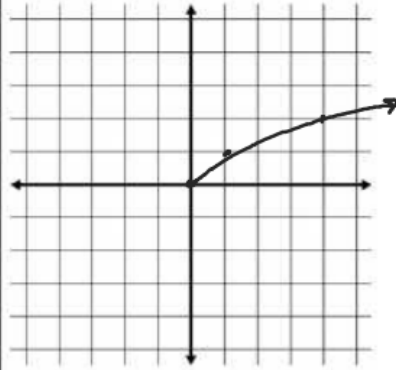
Vertical
Compression
by factor $\frac{1}{4}$



Describe how the graph of $y = \sqrt{x}$ can be transformed to the graph of the given equation.

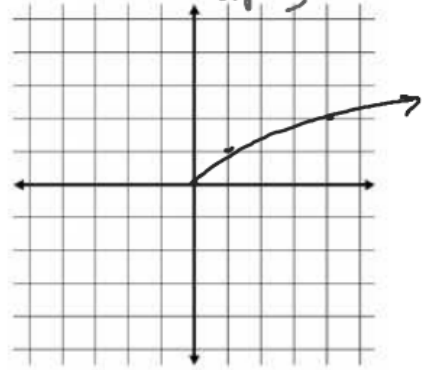
A) $y = \sqrt{x} + 1$

up 1



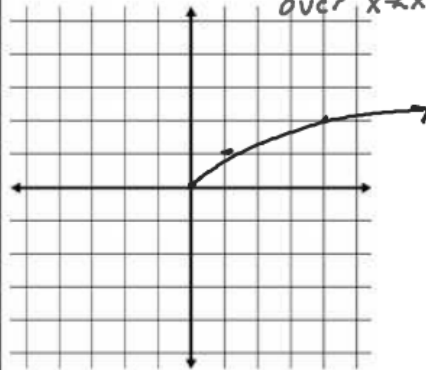
B) $y = \sqrt{x-2} + 3$

right 2
up 3



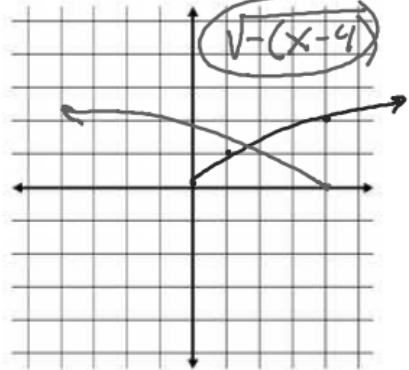
C) $y = -\sqrt{x} + 3$

up 3
Reflection
over x-axis

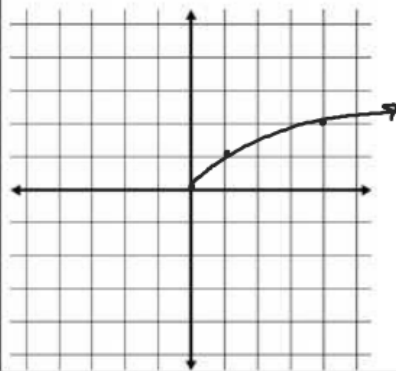


D) $y = \sqrt{4-x}$

$\sqrt{-x+4}$
 $\sqrt{-(x-4)}$



E) $y = 2\sqrt{x}$



F) $y = \sqrt{2x}$

