

Welcome back!

Grab the two handouts on the counter and start filling in the WHITE one (Parent Functions) for your Warm Up.

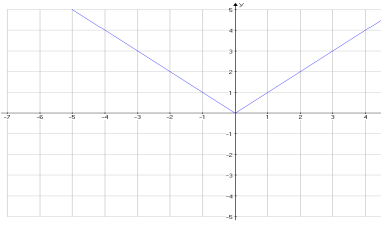
Library of Parent Functions

Standard Absolute Value Function $f(x) = |x|$

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

Range: $[0, \infty)$

Even/Odd/Neither



Jan 6-9:22 AM

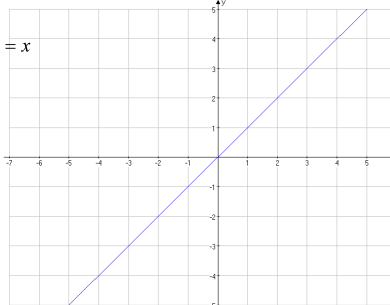
Aug 21-9:02 AM

Identity Function $f(x) = x$

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

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

Even/Odd/Neither

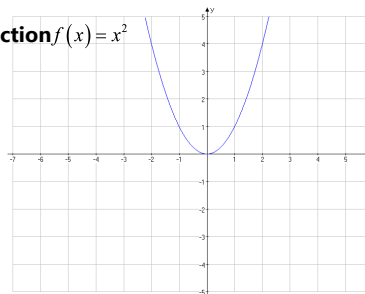


Standard Quadratic Function $f(x) = x^2$

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

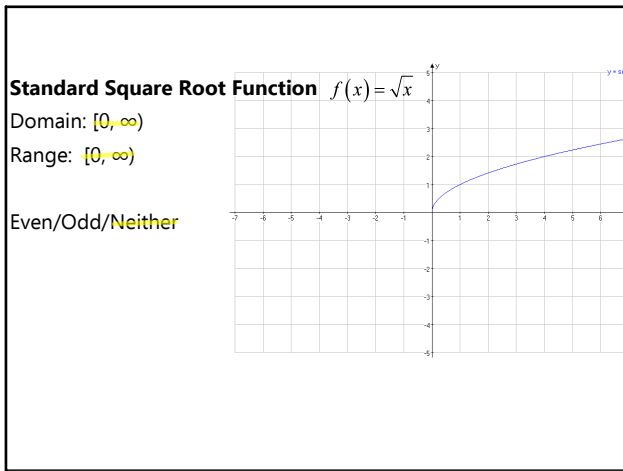
Range: $[0, \infty)$

Even/Odd/Neither

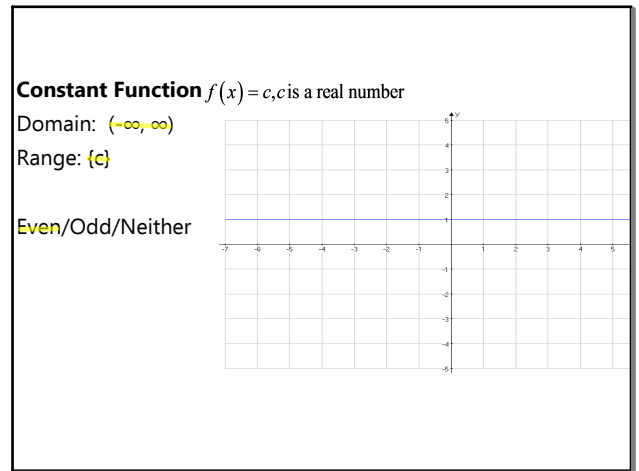


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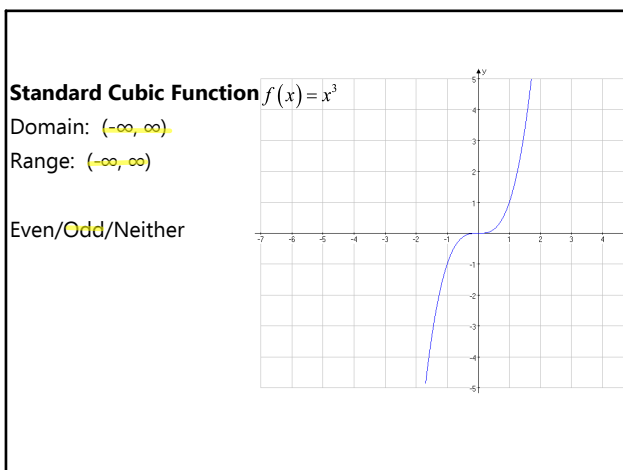
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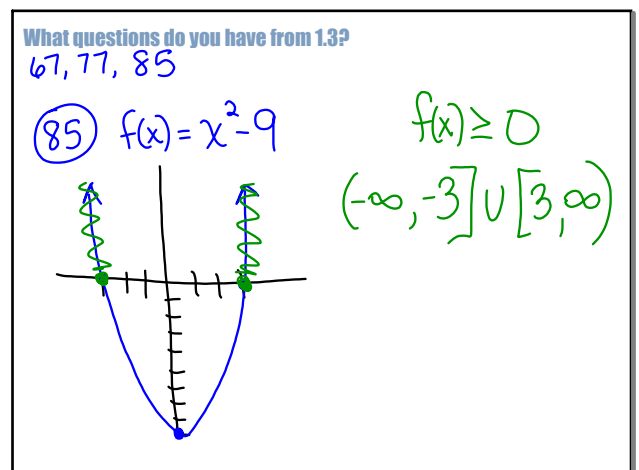
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Jul 31-1:36 PM

Let's Summarize $f(x) = x^2$

Let c be some positive real number and consider the graph $y = f(x)$.

$y = f(x) + c$ Shifts the graph of $y = f(x)$ up c units.

$y = f(x) - c$ Shifts the graph of $y = f(x)$ down c units.

$y = f(x + c)$ Shifts the graph of $y = f(x)$ left c units.

$y = f(x - c)$ Shifts the graph of $y = f(x)$ right c units.

$y = -f(x)$ reflects the graph of $y = f(x)$ about the x -axis.

$y = f(-x)$ reflect the graph of $y = f(x)$ about the y -axis.

$y = cf(x)$ Stretches or shrinks the graph of $y = f(x)$ $c > 1$ stretch $c < 1$ shrink.

$y = f(cx)$ Stretches or shrinks the graph of $y = f(x)$.

Vertical changes --> $+ \text{ or } - c$ outside parent graph

Horizontal changes --> $+ \text{ or } - c$ inside opposite parent graph

Inside parenthesis/inside parent graph --> Stretch/Shrink

Jan 24-12:08 PM

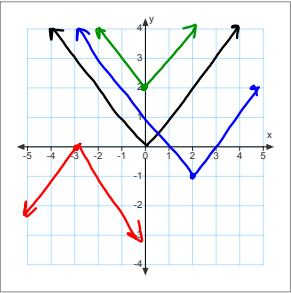
Graph the following functions:

$f(x) = |x|$

$g(x) = |x| + 2$

$h(x) = |x - 2| - 1$

$j(x) = -|x + 3|$

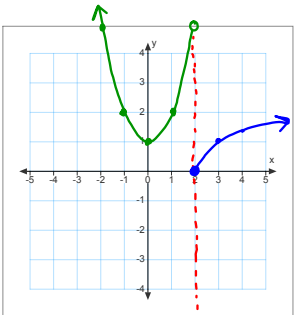


Jan 6-9:27 AM

Graphing Piecewise Functions

$f(x) = \begin{cases} x^2 + 1, & x < 2 \\ \sqrt{x - 2}, & x \geq 2 \end{cases}$

$x^2 + 1$	
0	1
1	2
2	5

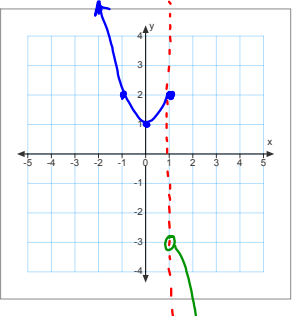


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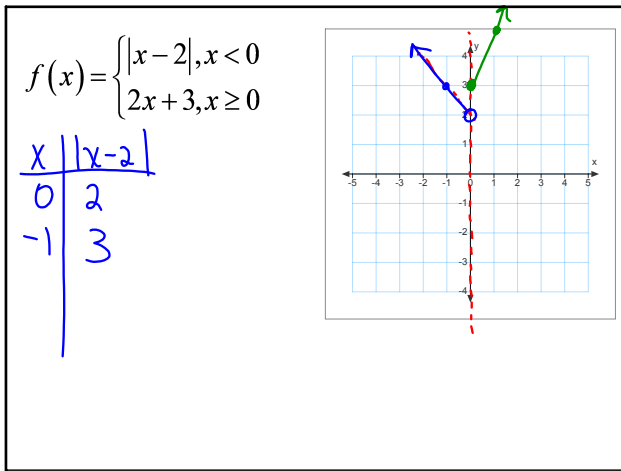
$f(x) = \begin{cases} x^2 + 1 & x \leq 1 \\ -x^2 - 2 & x > 1 \end{cases}$

x	$x^2 + 1$
1	2
0	1
-1	2
-2	5

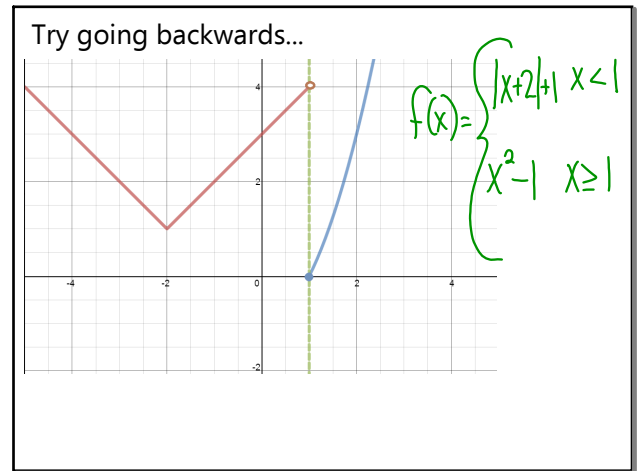
x	$-x^2 - 2$
1	-3
2	-6



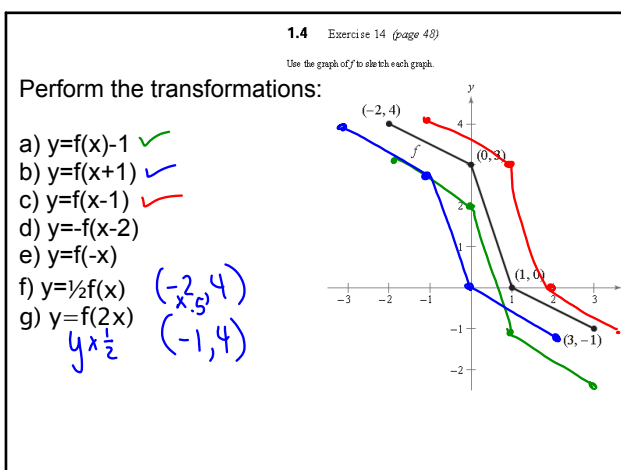
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Aug 27-10:39 PM

HOMEWORK

...transformations!

1.4 (p. 48): 3, 5, 13-19 odd, 23, 29, 33 + Piecewise Functions Worksheet

Aug 1-9:32 AM