

Questions on 4.3 HW?

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Home Tools SM3H-Module 4-S... 4.3b What Does it ... SM2 Module 4 SE.p... x

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3. $y = 6x^2 + 7x - 20$

$a = 6$
 $b = 7$
 $c = -20$

$x = \frac{-7 \pm \sqrt{7^2 - 4 \cdot 6 \cdot -20}}{2 \cdot 6} = \frac{49}{480}$ ^{$\frac{24}{26}$}

$\frac{-7 \pm \sqrt{529}}{12} = \frac{-7 \pm 23}{12}$

6. $y = \frac{1}{2}(x - 1)^2 - \frac{12}{2}$

$\frac{7+23}{12} = \frac{30}{12} = \frac{5}{2}$

$\frac{7-23}{12} = \frac{-16}{12} = -\frac{4}{3}$

$x = \left[-\frac{4}{3}, \frac{5}{2} \right]$

8.50 x 11.00 in

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Evaluate each expression for the given value of the variable.

11. $-s$; $s = 4$ 12. $-t$; $t = -7$ 13. $-x$; $x = 0$ 14. $-w$; $w = -1$

-4 $+ + 7 = 7$

15. $|v|$; $v = -25$ 16. $-(a)$; $a = -25$ 17. $-(-n)$; $n =$

18. $| -(-p) |$; $p = -6$ 19. $| -(-q) |$; $q = 8$ 20. $-| -(-r) |$; r

$| -(+ + 6) |$ $| -(-8) | = | 8 | = 8$
 $| -6 | = 6$

8.50 x 11.00 in

Assignments : $\frac{\text{Total Pts. possible}}{48}$

Assessments : 84

① Points missing from each category:
Assignments:
Assessments:

② My plan to make up points:

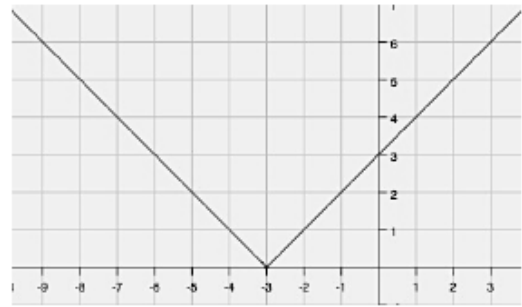
Finishing 4.3 part 3: pg 14

Part III

6. The graph below is another example of an absolute value function. The equation of this function can be written two ways:

as an absolute value function: $f(x) = |x + 3|$

or as a piece-wise: $f(x) = \begin{cases} -(x + 3), & x < -3 \\ (x + 3), & x \geq -3 \end{cases}$

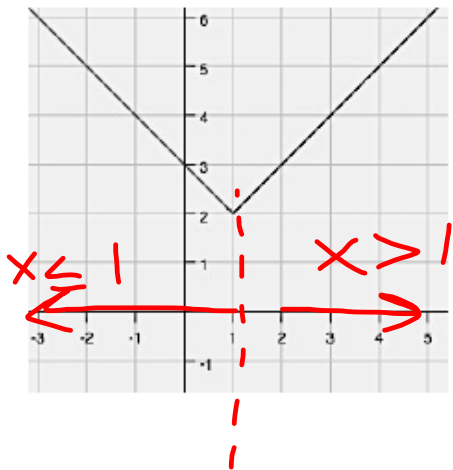


How do these two equations relate to each other?

both have x + 3

Below are graphs and equations of more linear absolute value functions. Write the piece-wise function for each. See if you can create a strategy for writing these equations.

7.

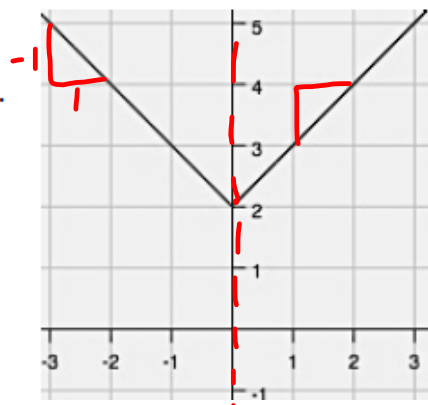


Absolute value: $f(x) = |x - 1| + 2$

Piece-wise: ~~f(x) =~~

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

8.



Absolute value: $f(x) = |x| + 2$

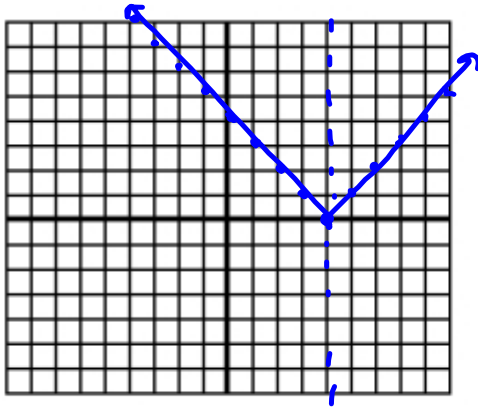
Piece-wise: ~~f(x) =~~

$$f(x) = \begin{cases} -x+2, & x \leq 0 \\ x+2, & x > 0 \end{cases}$$

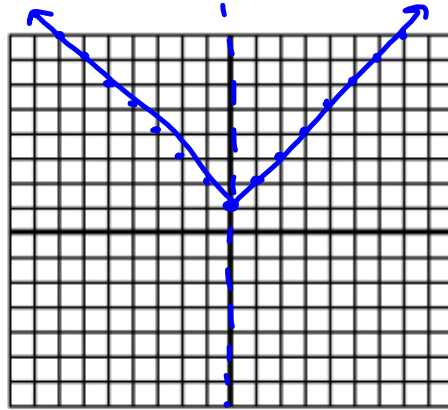
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Graph the following linear absolute value piece-wise functions.

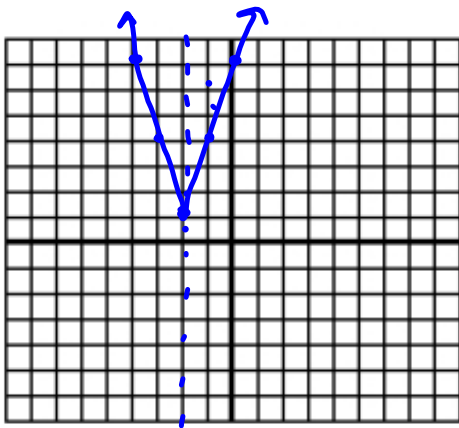
$$9. f(x) = |x - 4| = \begin{cases} -(x - 4), & x < 4 \\ (x - 4), & x \geq 4 \end{cases}$$



$$10. f(x) = |x| + 1 = \begin{cases} -(x) + 1, & x < 0 \\ (x) + 1, & x \geq 0 \end{cases}$$



11.



$$\text{Piece-wise: } f(x) = \begin{cases} -3(x + 2) + 1, & x < -2 \\ 3(x + 2) + 1, & x \geq -2 \end{cases}$$

$$\text{Absolute Value: } f(x) =$$

$$|3(x + 2)| + 1$$

12. Explain your method for doing the following:

- Writing piecewise linear absolute value functions from a graph.
- Writing piecewise linear absolute value functions from an absolute value function.
- Graphing absolute value functions (from either a piecewise or an absolute value equation).

4.4 Reflections of a Bike Lover

A Practice Understanding Task

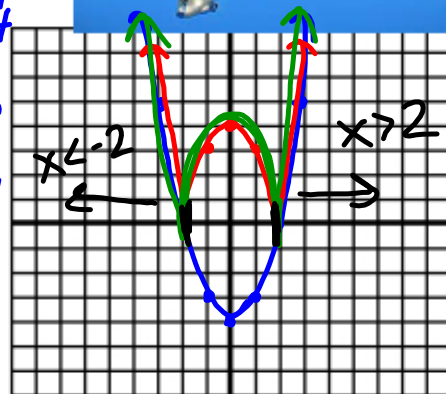


1. Graph the function $f(x) = x^2 - 4$
2. Graph $g(x) = |f(x)|$ on the same set of axes as $f(x)$.
3. Explain what happens graphically.
4. Write the piecewise function for $g(x)$.

x	f(x) = x ² - 4
-3	5
-2	0
-1	-3
0	-4
1	-3
2	0
3	5

negative y-values become positive.

$$g(x) = \begin{cases} -(x^2 - 4), & -2 \leq x < 2 \\ (x^2 - 4), & x < -2, \text{ or } x > 2 \end{cases}$$



5. Explain your process for creating this piecewise function.

x	f(x)	g(x)
-3	5	5
-2	0	0
-1	-3	3
0	-4	4
1	-3	3
2	0	0
3	5	5

6. Graph the function $f(x) = (x + 1)^2 - 9$

7. Graph $g(x) = |f(x)|$.

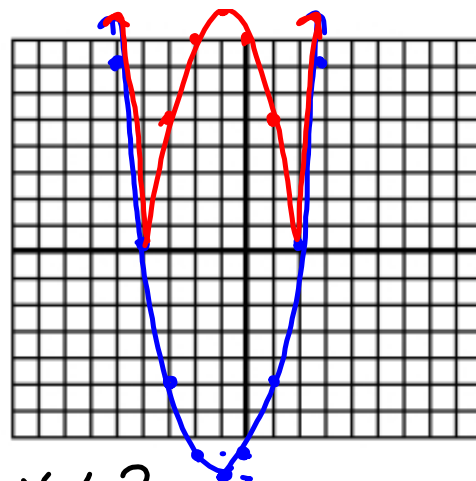
8. Explain what happens graphically?

neg. y-values become \oplus

9. Write the piece-wise function for $g(x)$.

$$g(x) = |f(x)| = |(x+1)^2 - 9|$$

$$g(x) = \begin{cases} -[(x+1)^2 - 9], & -4 \leq x \leq 2 \\ (x+1)^2 - 9, & x < -4 \text{ and } x > 2 \end{cases}$$

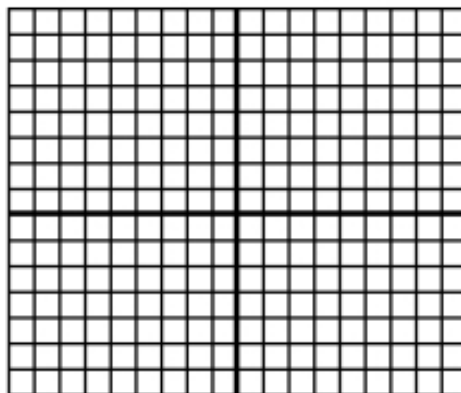


10. What do you have to think about when writing any absolute value piece-wise function?

Graph the following absolute value functions and write the corresponding piecewise functions for each.

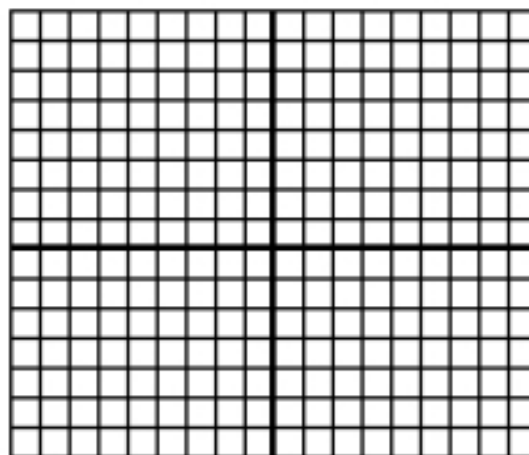
11. $g(x) = |x^2 - 4| + 1$

Piecewise:



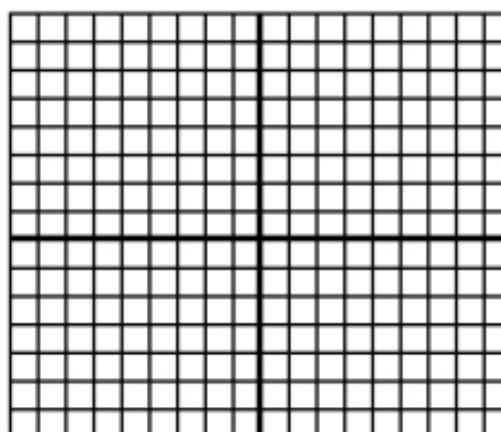
12. $g(x) = |(x + 2)^2 - 4| + 3$

Piecewise:



13. $g(x) = |(x - 3)^2 - 1| - 2$

Piecewise:



Homework

Finish 4.4 "Ready, Set, Go"