Algebra 1

Solve for x

1. $|x+1| = 9$

2. $3|x-4| - 5 = 25$

3. $-|2x-1| = -13$

4. $-|x-7| = 10$

Solve for the inequality & graph on a # line

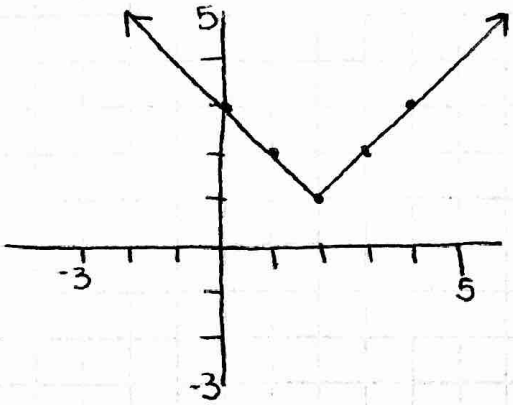
5. $|x-3| > 10$

6. $2|x+1| \leq 20$

7. $3|x-5| + 2 \geq 11$

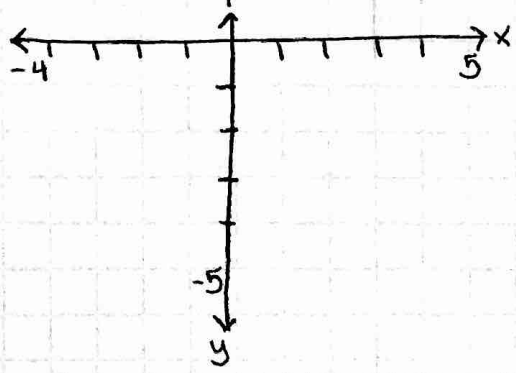
8. $|x-6| + 4 < 12$

9. Given the graph find the vertex, domain & range



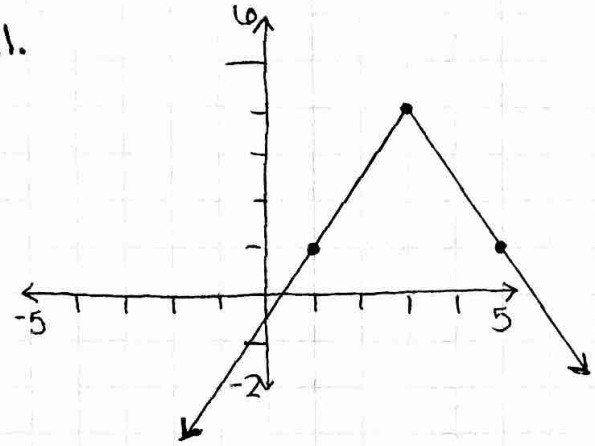
10. Given the equation describe the transformations & graph.

$f(x) = -2|x+1|$



Given the graphs find the equation:

11.



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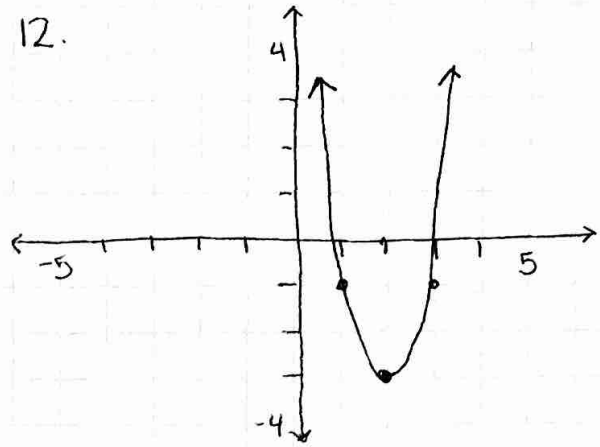
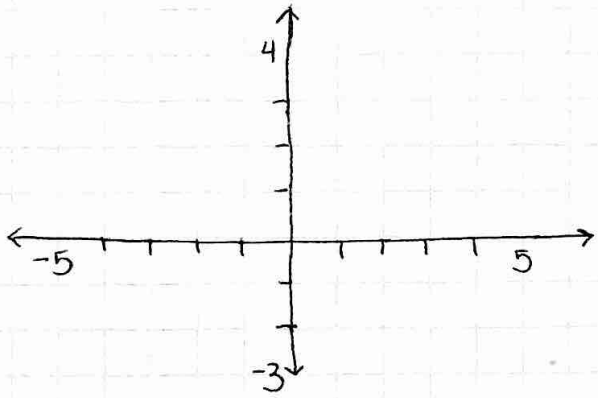


13. Given the equation fill in the chart & graph: $y = |x-4| + 2$

x	
y	



14. Write an equation given the parent function is $f(x)$

a) where it is reflected over the y-axis, up 5 & vertical dilation by ½

b) with a x-axis reflection & right 9.

Algebra 1

Solve for x

1. $|x+1| = 9$

$x+1=9$ $\quad$ $x+1=-9$

$\boxed{x=8}$ $\quad$ $\boxed{x=-10}$

2. $3|x-4| - 5 = 25$

$3|x-4| = 30$

$|x-4| = 10$

$x-4=10$ $\quad$ $x-4=-10$

$\boxed{x=14}$ $\quad$ $\boxed{x=-6}$

3. $\frac{-|2x-1|}{-1} = \frac{-13}{-1}$

$|2x-1| = 13$

$2x-1=13$
$2x=14$
$\boxed{x=7}$

$2x-1=-13$
$2x=-12$
$\boxed{x=-6}$

4. $-|x-7| = 10$

$|x-7| = -10$

$\boxed{\text{not possible}}$

Solve for the inequality & graph on a # line

5. $|x-3| > 10$

$x-3>10$ $\quad$ $x-3<-10$

$x>13$ $\quad$ $x<-7$

6. $2|x+1| \le 20$

$|x+1| \le 10$

$-10 \le x+1 \le 10$

$-11 \le x \le 9$

7. $3|x-5| + 2 \ge 11$

$3|x-5| \ge 9$

$|x-5| \ge 3$

$x-5 \ge 3$
$x \ge 8$

$x-5 \le -3$
$x \le 2$

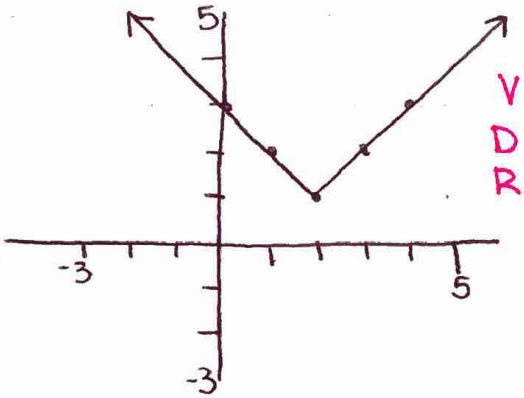
8. $|x-6| + 4 < 12$

$|x-6| < 8$

$-8 < x-6 < 8$

$-2 < x < 14$

9. Given the graph find the vertex, domain & range

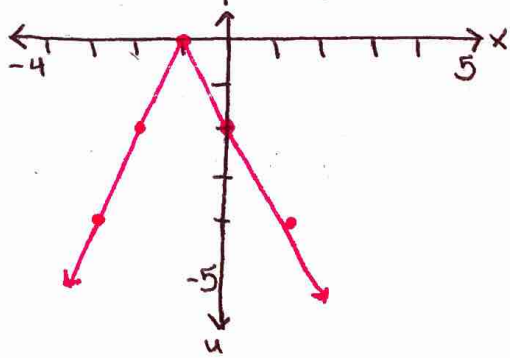


V: (2, 1)
D: (-∞, ∞)
R: [1, ∞)

10. Given the equation describe the transformations & graph.

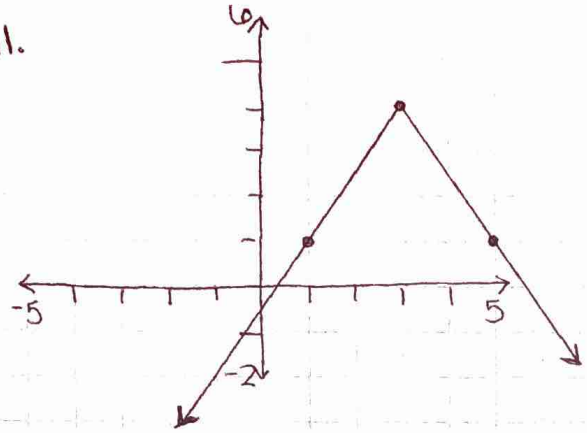
$f(x) = -2|x+1|$

over x-axis
VD by 2
L1



Given the graphs find the equation:

11.



$y = -a|x-3| + 4$

$1 = -a|1-3| + 4$

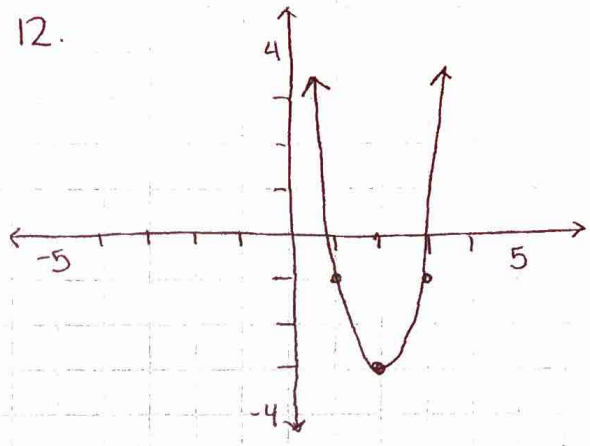
$-3 = -a|-2|$

$-3 = -2a$

$3/2 = a$

$\boxed{y = -\frac{3}{2}|x-3| + 4}$

12.



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

$-1 = a(1-2)^2 - 3$

$2 = a(-1)^2$

$2 = a$

$\boxed{y = 2(x-2)^2 - 3}$

13. Given the equation fill in the chart & graph: $y = |x-4| + 2$

x	0	1	2	3	4	5	6	7
y	6	5	4	3	2	3	4	5

14. Write an equation given the parent function is f(x)

a) where it is reflected over the y-axis, up 5 & vertical dilation by ½

$\frac{1}{2}f(-x) + 5 = y$

b) with a x-axis reflection & right 9.

$-f(x-9) = y$