Solutions

1. Given the table of values for $y=f(x)$, create a table of values for $y=|f(x)|$.

a)

x	y=f(x)	y=|f(x)|
-2	-3	3
-1	-1	1
0	1	1
1	3	3
2	5	5

b)

x	y=f(x)	y=|f(x)|
-2	0	0
-1	-2	2
0	-2	2
1	0	0
2	4	4

2. The point (-5,-8) is on the graph of $y=f(x)$. Identify the corresponding point on the graph of $y=|f(x)|$.

The corresponding point for (-5,-8) on the graph of $y=|f(x)|$ is (-5,8).

3. The graph of $y=f(x)$ has an x-intercept of 3 and a y-intercept of -4. What are the x-intercept and the y-intercept of the graph of $y=|f(x)|$?

$y=f(x)$	$y=\|f(x)\|$
x-int: 3	x-int: 3
y-int: -4	y-int: 4

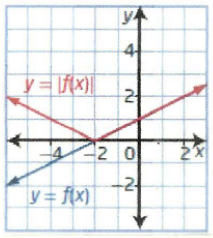
Solutions

4. The graph of $y=f(x)$ has x-intercepts of -2 and 7, and a y-intercept of $-\frac{3}{2}$. State the x-intercepts and the y-intercept of the graph of $y=|f(x)|$.

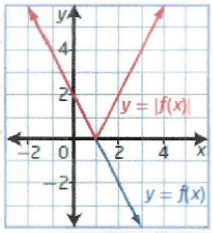
$y=f(x)$	$y=\|f(x)\|$
x-ints: -2 and 7	x-ints: -2 and 7
y-int: $-\frac{3}{2}$	y-int: $\frac{3}{2}$

5. Copy the graph of $y=f(x)$. On the same set of axes, sketch the graph of $y=|f(x)|$.

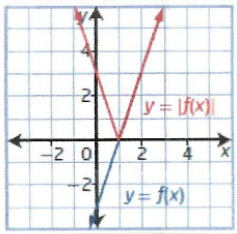
a)



b)



c)



Solutions

6. Sketch the graph of each absolute value function. State the intercepts and the domain and range.

a) $y = |2x - 6|$

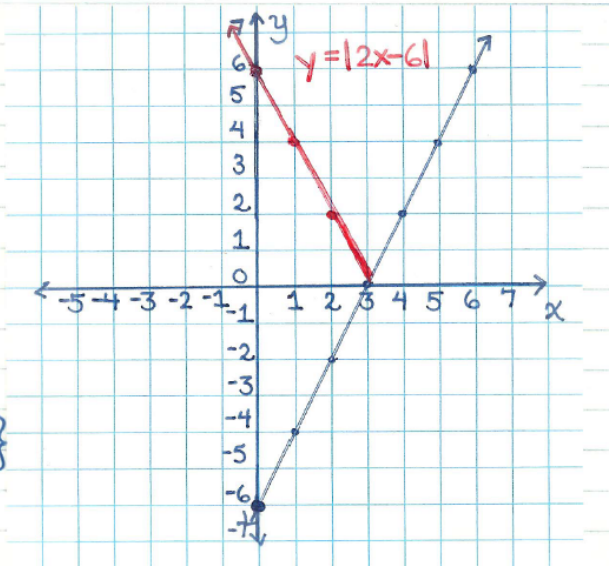
↳ $y = 2x - 6$

slope $\Rightarrow \frac{2}{1}$ (up) (over)

y-int $\Rightarrow -6$

$\Rightarrow$ Domain: $\{x \mid x \in R\}$

$\Rightarrow$ Range: $\{y \mid y \geq 0, y \in R\}$



b) $y = |x + 5|$

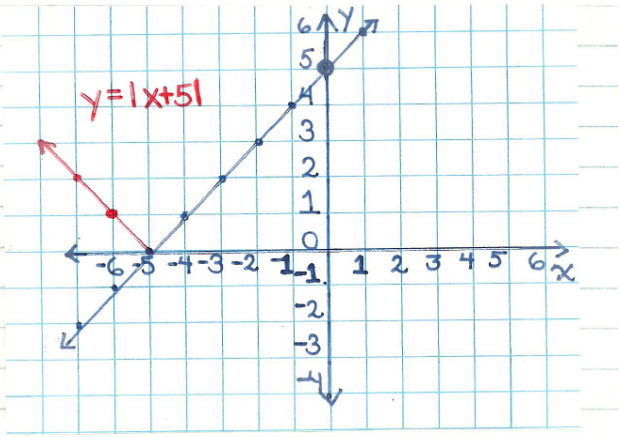
↳ $y = |x + 5$

Slope $\Rightarrow \frac{1}{1}$ (up) (over)

y-int $\Rightarrow 5$

$\Rightarrow$ Domain: $\{x \mid x \in R\}$

$\Rightarrow$ Range: $\{y \mid y \geq 0, y \in R\}$



Solutions

c) $f(x) = |-3x-6|$

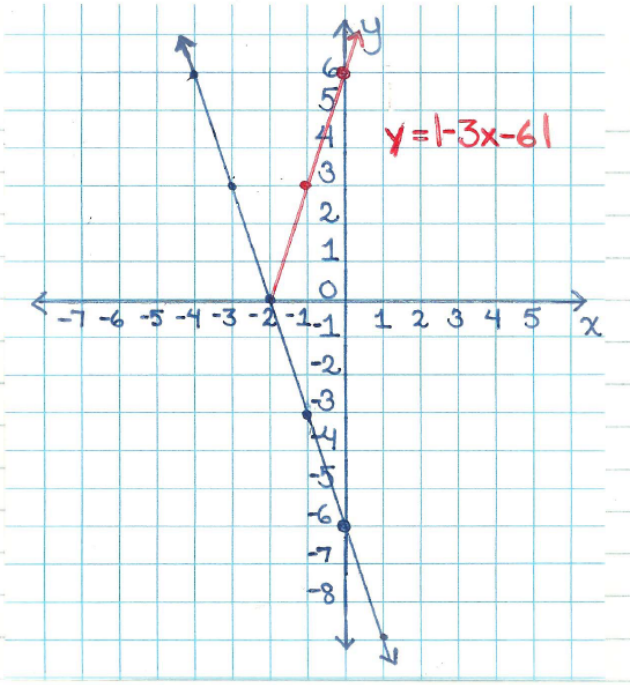
↳ $y = -3x-6$

Slope $\Rightarrow \frac{-3}{1}$ (down) (over)

y-int $\Rightarrow -6$

$\Rightarrow$ Domain: $\{x \mid x \in R\}$

$\Rightarrow$ Range: $\{y \mid y \geq 0, y \in R\}$



d) $g(x) = |-x-3|$

↳ $y = -|x-3$

Slope $\Rightarrow \frac{-1}{1}$ (down) (over)

y-int $\Rightarrow -3$

$\Rightarrow$ Domain: $\{x \mid x \in R\}$

$\Rightarrow$ Range: $\{y \mid y \geq 0, y \in R\}$