You should know how determine the piecewise definition both graphically & algebraically.

EXTRA PRACTICE:

1. Consider the absolute value function $y = \left|\frac{2}{3}x - 4\right|$.

   a. Determine the y-intercept and the x-intercept.
   b. Sketch the graph.
   c. State the domain and range.
   d. Express the absolute value function as a piecewise function.

a) y-int: $|-4| = 4$

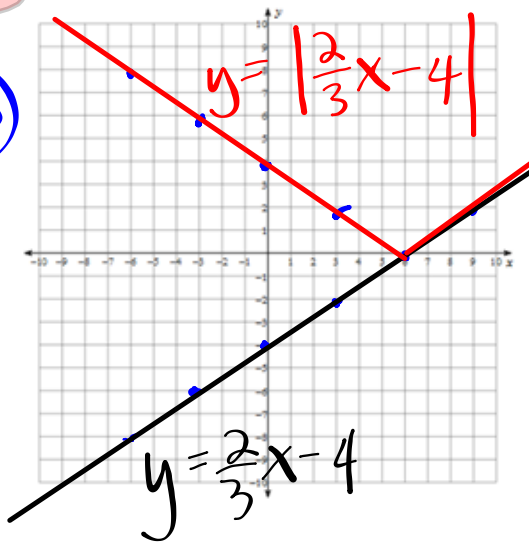
x-int: $0 = \left|\frac{2}{3}x - 4\right|$

$0 = \frac{2}{3}x - 4$

$4 = \frac{2}{3}x$

$6 = x$

b)



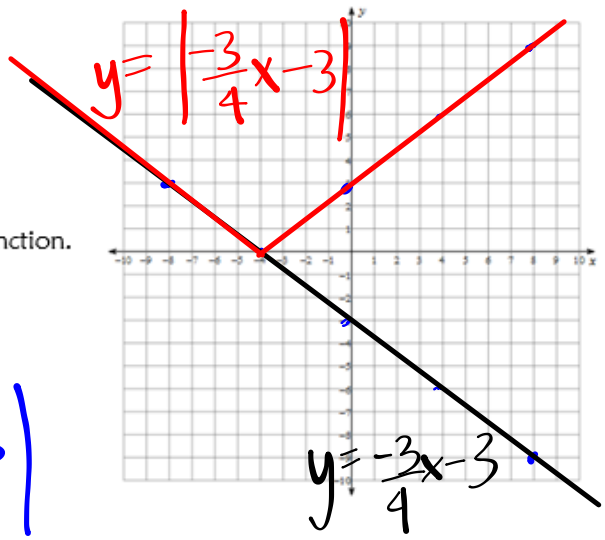
c) D: $x \in R$

R: $y \geq 0, y \in R$

d) $y = \begin{cases} \frac{2}{3}x - 4; & x \geq 6 \\ -\frac{2}{3}x + 4; & x < 6 \end{cases}$

2. Consider the absolute value function $y = \left|-\frac{3}{4}x - 3\right|$.

a. Determine the y-intercept and the x-intercept.
b. Sketch the graph.
c. State the domain and range.
d. Express the absolute value function as a piecewise function.



a) y-int = $|-3| = 3$

x-ints: $0 = \left|\frac{-3}{4}x - 3\right|$

$0 = -\frac{3}{4}x - 3$

$3 = -\frac{3}{4}x$

$-4 = x$

c) D: $x \in \mathbb{R}$

R: $y \geq 0$

d) $y = \begin{cases} -\frac{3}{4}x - 3; & x \leq -4 \\ \frac{3}{4}x + 3; & x > 4 \end{cases}$