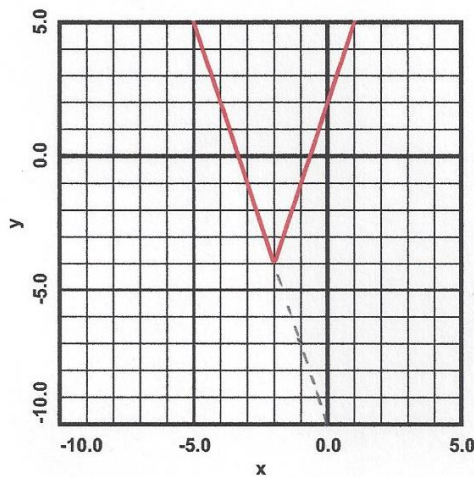


PRE-AP ALGEBRA 2

1B.6 CLASSWORK

- 1) Graph $y + 4 = 3|x + 2|$ on the grid below.



- 2) By looking at the graph in problem 1, convert $y + 4 = 3|x + 2|$ into a piecewise-defined function containing no absolute values.

$$y = \begin{cases} -3x - 10 & , x \leq -2 \\ 3x + 2 & , x > -2 \end{cases}$$

- 3) Algebraically, convert $y + 5 = 2|x - 3|$ to a piecewise-defined function containing no absolute values.

$x \leq 3$: $y + 5 = -2(x - 3)$

$$y + 5 = -2x + 6$$

$$y = -2x + 1$$

$x > 3$: $y + 5 = 2(x - 3)$

$$y + 5 = 2x - 6$$

$$y = 2x - 11$$

$$y = \begin{cases} -2x + 1 & , x \leq 3 \\ 2x - 11 & , x > 3 \end{cases}$$

- 4) For the function in problem 3, calculate the average rate of change of y with respect to x on the interval $-2 \leq x \leq 5$.

$$y(5) = 2(5) - 11 = -1$$

$$y(-2) = -2(-2) + 1 = 5$$

$$\frac{y(5) - y(-2)}{5 - (-2)} = \frac{-1 - 5}{5 + 2} = -\frac{6}{7}$$

- 5) Algebraically, convert

$$y = \begin{cases} -\frac{2}{3}x + 6 & , x \leq 3 \\ \frac{2}{3}x + 2 & , x > 3 \end{cases}$$

to an absolute value function.

$x = 3$ is the vertex

$$y = \begin{cases} -\frac{2}{3}(3) + 6 = 4 \\ \frac{2}{3}(3) + 2 = 4 \end{cases} = 4$$

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