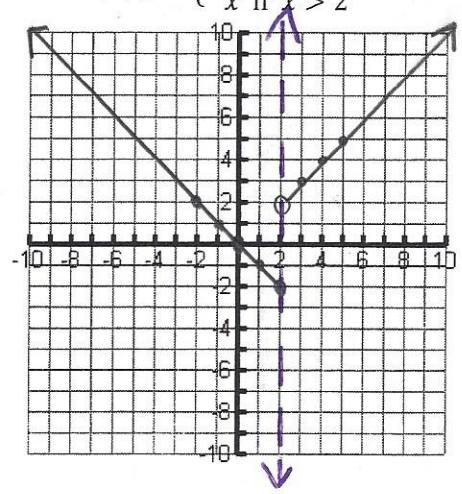
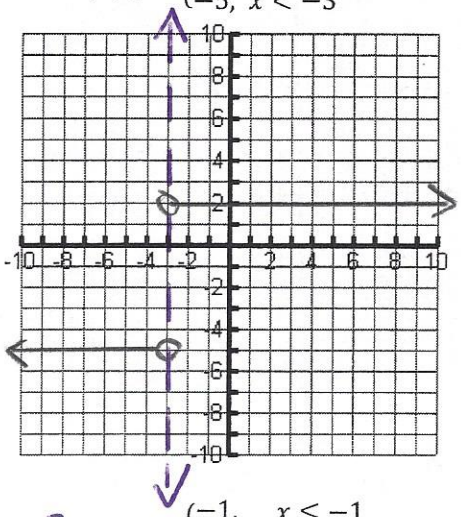
Algebra 2 YL
4.4 Graphing Piecewise Functions Worksheet

Name Key
Date _____ Period _____

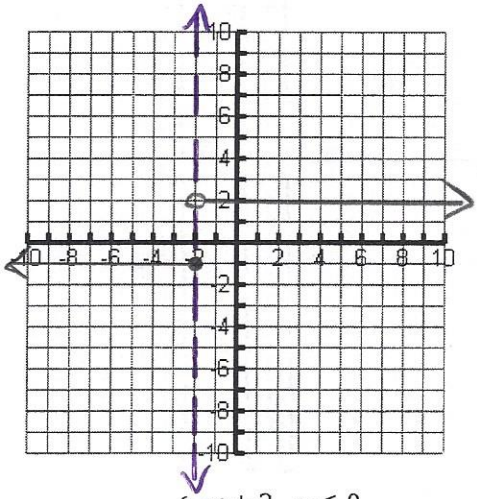
1. 2 $f(x) = \begin{cases} -x & \text{if } x \le 2 \\ x & \text{if } x > 2 \end{cases}$



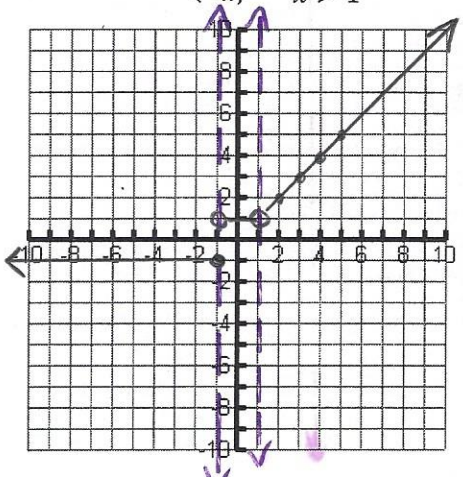
2. 2 $f(x) = \begin{cases} 2, & x > -3 \\ -5, & x < -3 \end{cases}$



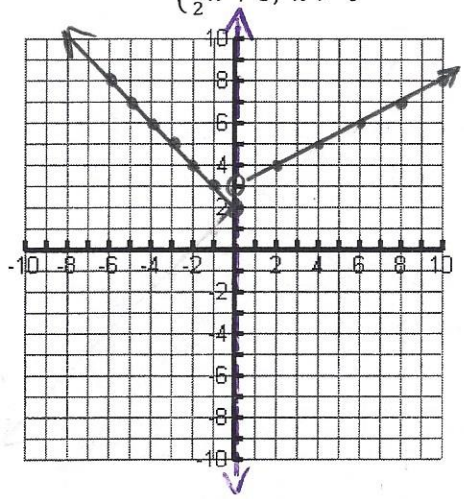
3. 2 $f(x) = \begin{cases} -1, & x \le -2 \\ 2, & x > -2 \end{cases}$



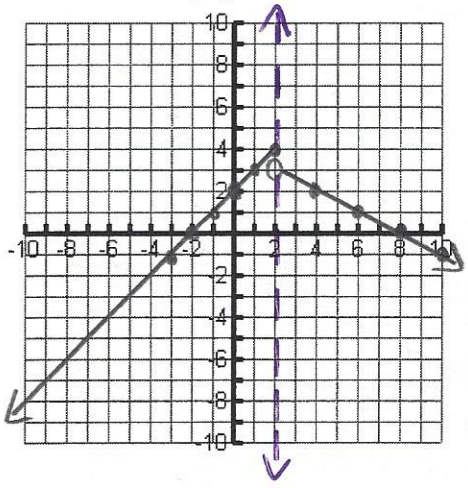
4. 3 $f(x) = \begin{cases} -1, & x \le -1 \\ 1, & -1 < x < 1 \\ x, & x > 1 \end{cases}$



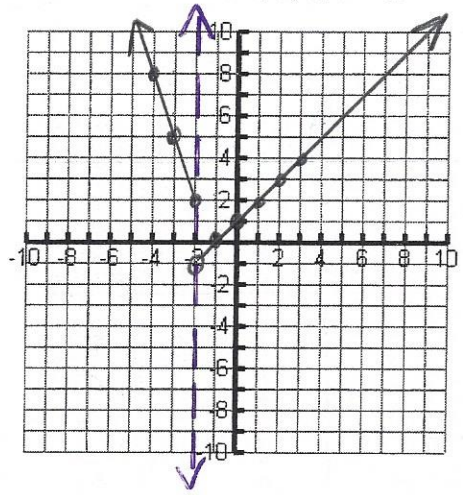
5. 2 $f(x) = \begin{cases} -x + 2, & x \le 0 \\ \frac{1}{2}x + 3, & x > 0 \end{cases}$



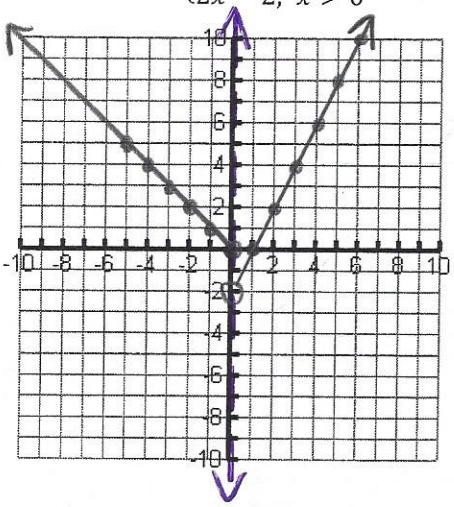
6. 2 $f(x) = \begin{cases} x + 2, & x \le 2 \\ -\frac{1}{2}x + 4, & x > 2 \end{cases}$



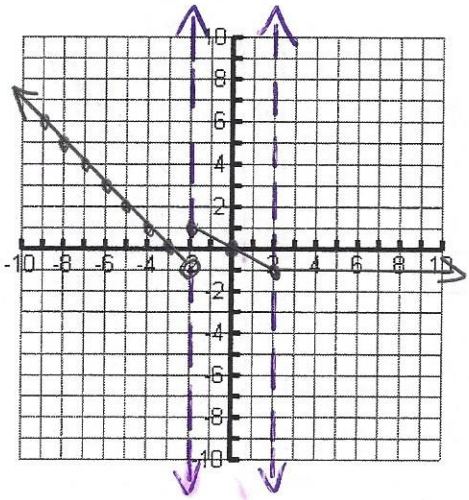
7. 2 $f(x) = \begin{cases} -3x - 4, & x \le -2 \\ x + 1, & x > -2 \end{cases}$



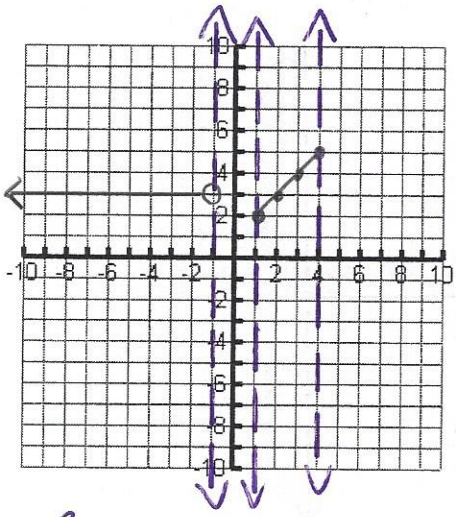
8. 2 $f(x) = \begin{cases} -x, & x \le 0 \\ 2x - 2, & x > 0 \end{cases}$



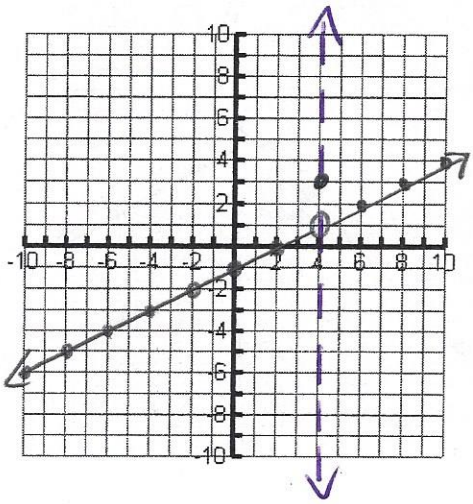
9. 3 $f(x) = \begin{cases} -x - 4, & x < -2 \\ -\frac{1}{2}x, & -2 \le x \le 2 \\ -1, & x > 2 \end{cases}$



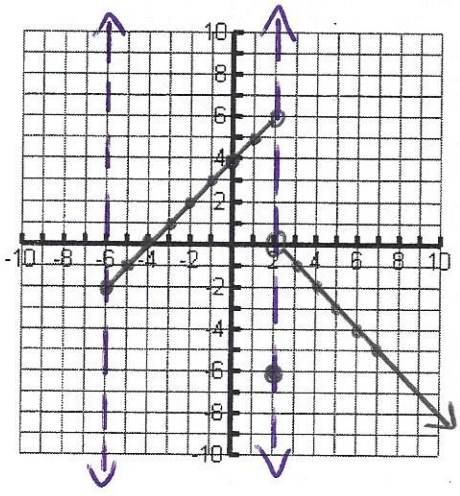
10. 2 $f(x) = \begin{cases} 3, & x < -1 \\ x + 1, & 1 \le x \le 4 \end{cases}$



11. 2 $f(x) = \begin{cases} \frac{1}{2}x - 1, & x \ne 4 \\ 3, & x = 4 \end{cases}$



12. 3 $f(x) = \begin{cases} x + 4, & -6 \le x < 2 \\ -6, & x = 2 \\ -x + 2, & x > 2 \end{cases}$



Algebra 2 Name_____

Review with Graphing Piecewise (Algebra 2 YL) worksheet Hour____

Write the point-slope form of the equation of the line through the given point with the given slope.

1) through: $(-4, 1)$, slope $= -\frac{3}{4}$

$y - 1 = -\frac{3}{4}(x+4)$

Write the point-slope form of the equation of the line through the given points.

2) through: $(-1, -5)$ and $(-4, 3)$

$m = \frac{-5-3}{-1+4} = \frac{-8}{3}$

$y+5 = -\frac{8}{3}(x+1)$

$y-3 = -\frac{8}{3}(x+4)$

Write the slope-intercept form of the equation of the line through the given point with the given slope.

3) through: $(-4, 2)$, slope $= -\frac{5}{4}$

$y-2 = -\frac{5}{4}(x+4)$

$y-2 = -\frac{5}{4}x - 5$

$+2 \quad +2$

$y = -\frac{5}{4}x - 3$

Write the slope-intercept form of the equation of the line through the given points.

4) through: $(4, 4)$ and $(3, -1)$

$m = \frac{4+1}{4-3} = \frac{5}{1} = 5$

$y-4 = 5(x-4)$

$y-4 = 5x - 20$

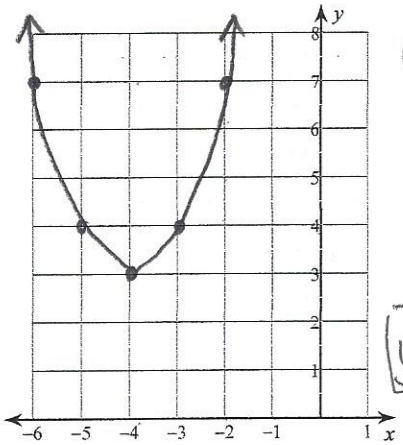
$+4 \quad +4$

$y = 5x - 16$

Convert to vertex form and then graph.

5) $y = x^2 + 8x + 19$

$x = \frac{-8}{2(1)} = \frac{-8}{2} = -4$



$(-4)^2 + 8(-4) + 19$

$16 - 32 + 19$

$y = 3$

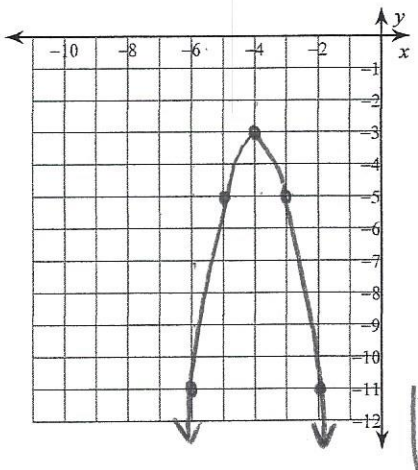
$(-4, 3)$

$a = 1$

$y = 1(x+4)^2 + 3$

6) $y = -2x^2 - 16x - 35$

$x = \frac{16}{2(-2)} = \frac{16}{-4} = -4$



$-2(-4)^2 - 16(-4) - 35$

$-32 + 64 - 35$

$y = -3$

$(-4, -3)$

$a = -2$

$y = -2(x+4)^2 - 3$