Name Period Date

READY

Topic: Finding the x-intercept(s) for a quadratic function

Find the x-intercepts of the following quadratic functions.

1. $y = x^2 + 3x - 10$

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

x-int. $(-5,0)(2,0)$

2. $y = x^2 + 8x + 7$

$y = (x+7)(x+1)$

x-int. $(-7,0)(-1,0)$

3. $y = 6x^2 + 7x - 20$

$y = 6x^2 - 8x + 15x - 20$

$y = 2x(3x-4) + 5(3x-4)$

$y = (2x+5)(3x-4)$ x-int. $(-5/2, 0)$ $(4/3, 0)$

Quad Rates of Change

→1 ↑1

→2 ↑4

→3 ↑9

4. $y = (x-2)^2 - 9$

Vertex $(2,-9)$

x-int. $(-1,0)(5,0)$

5. $y = -(x+3)^2 + 9$

Vertex $(-3,9)$

x-int. $(-6,0)(0,0)$

6. $y = \frac{1}{2}(x-1)^2 - 2$

Vertex $(1,-2)$

x-int. $(-1,0), (3,0)$

SET

Topic: Absolute value equations

Use the given information to write the indicated form of the function.

$f(x) = |x+5| - 4$

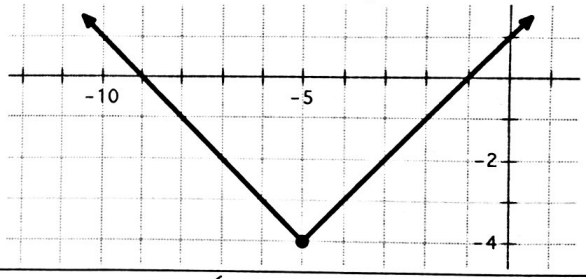
7. Piecewise equation

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

x	$f(x)$
-1	9
0	6
1	3
2	0
3	3
4	6

Vertex

8. Absolute value equation



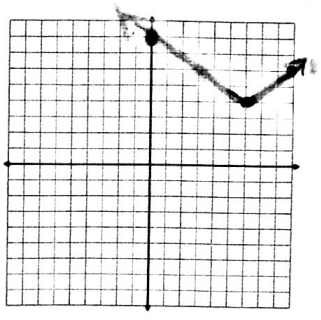
9. Make a table of values. Be sure to include the vertex in the table.

$h(x) = 5|x-6| - 8$

x	$h(x)$
9	7
8	3
7	-2
6	-8
5	-3
4	7

Vertex

10. Graph $f(x) = \begin{cases} -\frac{2}{3}(x-6) + 4, & x < 6 \\ \frac{2}{3}(x-6) + 4, & x \ge 6 \end{cases}$



10a. You have money in your wallet, but you don't know the exact amount. When a friend asks you, you say that you have 100 dollars give or take 25. Use an absolute value equation to find least and biggest amount of money in your pocket?

The distance from 100 is less than or equal to 25

$|x-100| \leq 25$

least biggest
$75 \leq x \leq 125$

10b. The ideal selling price of a Honda Accord is 24000. The dealer allows this price to vary 6% . What is the lowest price this dealer can sell this car?

The distance from 24000 is less than or equal to .06(24000) or 1440

$|x-24000| \leq 1440$

lowest highest
$22560 \leq x \leq 25440$

GO
Topic: Interpreting absolute value

Evaluate each expression for the given value of the variable.

11. $-s;\ s = 4$
$-s = -4$

12. $-t;\ t = -7$
$-t = 7$

13. $-x;\ x = 0$
$-x = 0$

14. $-w;\ w = -11$
$-w = 11$

15. $|v|;\ v = -25$
$|v| = 25$

16. $-(a);\ a = -25$
$-(a) = 25$

17. $-(-n);\ n = -2$
$-(-n) = -2$

18. $|-(-p)|;\ p = -6$
$|-(-p)| = 6$

19. $|-(-q)|;\ q = 8$
$|-(-q)| = 8$

20. $-|-(-r)|;\ r = -9$
$-|-(-r)| = -9$