Bell Ringer

Tuesday 10/16

What are the solutions of each equation? Solve by any method.

1. $k^2 + 3k = 10$

$k^2 + 3k - 10 = 0$

$(k+5)(k-2) = 0$

$k+5=0$ $\quad k-2=0$

$k=-5$ $\quad k=2$

2. $a^2 + a - 2 = 0$

$(a+2)(a-1)=0$

$a+2=0 \quad a=-2$

$a-1=0 \quad a=1$

3. $a^2 - 7 = 6$

$\sqrt{a^2} = \sqrt{8}$

$a = \sqrt{8} = 2\sqrt{2}$

$4 \cdot 2$

$a = \pm 2\sqrt{2}$

4. What are the solutions of $-2a^2 + 3a = -2$?

3.3 A hw due tomorrow

Quiz 3C tomorrow

Write in vertex form the quadratic equation that has the vertex (2, -1) and goes through the point (3, 0).

h k x y

$y = a(x-h)^2 + k$

$0 = a(3-2)^2 - 1$

$0 = a(1)^2 - 1$

$0 - 1a - 1$

$+1 \quad +1$

$\frac{1}{1} = \frac{a}{1}$

$1 = a$

$y = 1(x-2)^2 - 1$

$y = (x-2)^2 - 1$

Find the zeros of the quadratic function

$$f(x) = x^2 + 7x + 12$$

Write in char form w/ zeros -4, -3

12: 4, 3; 7

$0 = (x+4)(x+3)$

$x+4=0$ $\quad -4 \quad -4$ $\qquad x+3=0$ $\quad -3$

$x=-4 \qquad x=-3$

$x=-4 \quad +4 \quad +4$ $\qquad x=-3 \quad +3 \quad +3$

$(x+4)=0 \qquad (x+3)=0$

$(x+4)(x+3)$

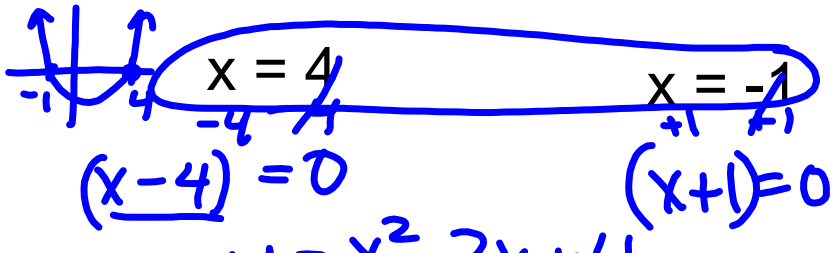
$x^2+3x+4x+12$

$x=-4$

$(x+4)$

$x^2+7x+12$

Which factors give the following zeros?



$(x-4)=0$ $(x+1)=0$

	x	-4
x	x^2	$-4x$
$+1$	$1x$	$+4$

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

$3 \cdot x = \frac{2}{3} \cdot 3$ $5x = -\frac{4}{5} \cdot 5$ $(5x+4)=0$

$3x = 2$ $-2 \quad -2$

$(3x-2)=0$

$5x = -4$ $+4 \quad +4$

$5x+4=0$

$(3x-2)(5x+4) = 15x^2 + 12x - 10x - 8$

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

Write a quadratic equation in standard form that has the zeros x = -3 and 5.

WHITEBOARDS

Which factors give the following zeros?

$x = 7$

$-7 \quad -7$

$(x-7)$

$8x = -\frac{3}{8}$ $\quad \cdot 8$

$(8x+3)$

$8x = -3$

$8x+3=0$

Write a quadratic equation in standard form that has the zeros x = 4 and 1.

$x = 4 \quad x = 1$

$-4 \quad -4 \quad -1 \quad -1$

$(x-4)(x-1)$

$y = x^2 - 1x - 4x + 4$

$y = x^2 - 5x + 4$

Which factors give the following zeros?

$x = -5$

$+5 \quad +5$

$(x+5)$

$6x = -\frac{5}{6}$ $\cdot 6$

$6x = -5$

$+5 \quad +5$

$(6x+5)$

Write a quadratic equation in standard form that has the zeros x = -1 and 2/5.

$x = -1$ $\quad 5x = 2$ $\quad 5x = 2$

$+1 \quad +1 \quad\quad -2 \quad -2$

$(x+1)(5x-2)$

$5x^2 - 2x + 5x - 2 = 5x^2 + 3x - 2$

Which factors give the following zeros?

x = 0

$x - 0 = 0$

$x = 0$

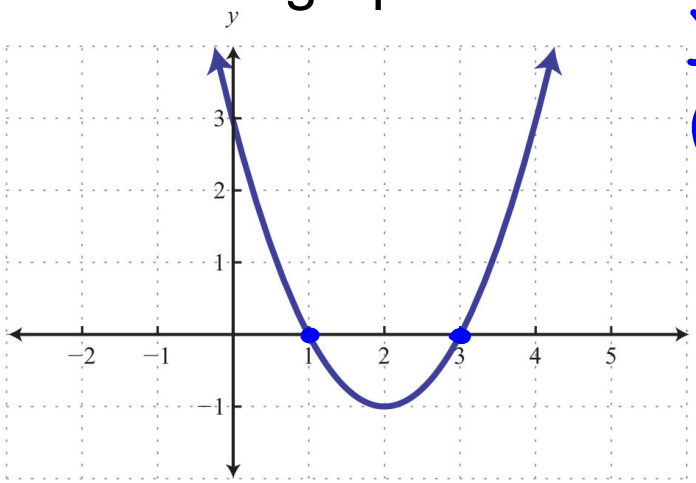
$4x = \frac{1}{4}$ 4

$4x = 1$

$4x - 1$

$x(4x - 1) = 0$

Write a quadratic equation in **standard form** of the graph below.



$x = 1, 3$

$x = 1$ $\quad x = 3$

$x - 1 = 0$ $\quad x - 3 = 0$

$(x-1)$ $\quad (x-3)$

	x	-1
x	x^2	$-1x$
-3	$-3x$	$+3$

$x^2 - 4x + 3$

Write a quadratic equation in standard form that has the zeros x = -1/3 and 2.

$3x = -\frac{1}{3}\cdot 3$

$3x = -1$

$+1 \quad +1$

$(3x+1) = 0$

$x = 2$

$-2 \quad -2$

$(x-2) = 0$

$(3x+1)(x-2)$

$3x^2 - 6x + 1x - 2$

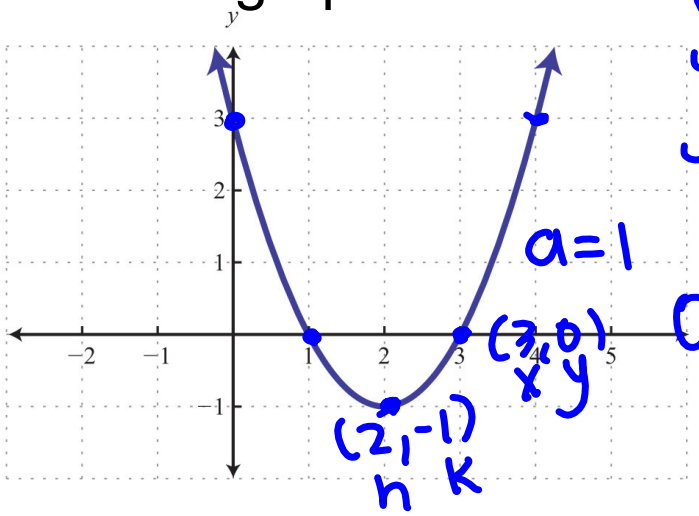
$3x^2 - 5x - 2$

Which factors give the following zeros?

$x = \frac{1}{2}$ x = 6

Write a quadratic equation in standard form that has the zeros x = -5 and 0.

Write a quadratic equation in **vertex form** of the graph below.



$y = a(x-h)^2 + k$

$y = a(x-2)^2 - 1$

$y = (x-2)^2 - 1$

$a = 1$

$0 = a(3-2)^2 - 1$

$0 = a - 1$

$+1 \quad +1$

$1 = a$

due tomorrow - check key online :)

Name:_____Hr:____

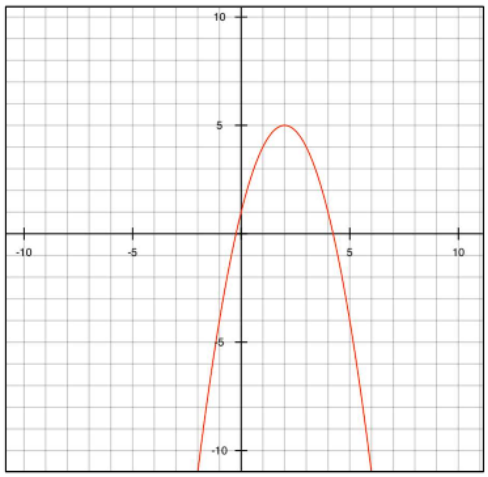
3.3B Writing Quadratic Equations Given the Zeros (roots, solutions, x intercepts) or a Graph

Write the quadratic equation in standard form when given the solutions.

1. $x = 4, 1$
2. $x = -5, -2$
3. $x = 7, 0$
4. $x = \frac{1}{2}, 8$
5. $x = \frac{3}{5}, 0$
6. $x = \frac{2}{3}, -2$
7. $x = -3, 1$
8. $x = -\frac{1}{3}, 2$
9. $x = -3, -3$

Write a quadratic equation given the graphs below.

9.



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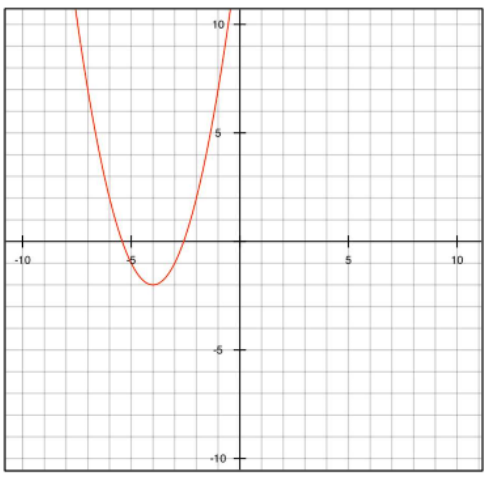

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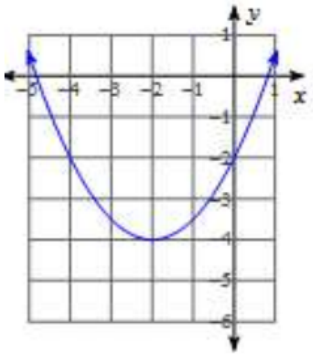

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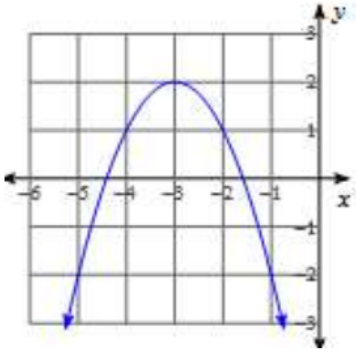

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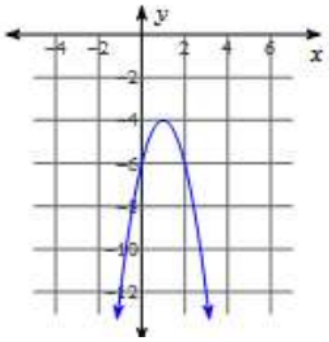

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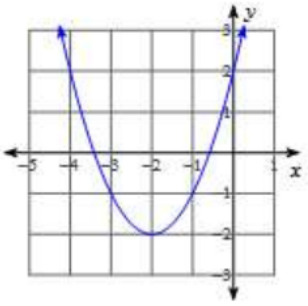

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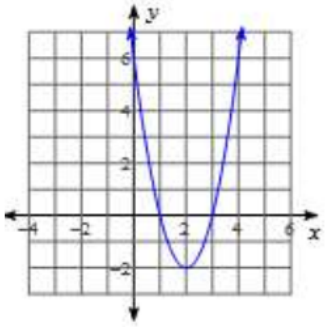

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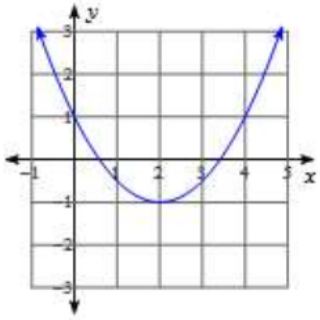

17. Write an equation given the following points:

$(-1,-12),(0,-6),(3,0)$

18. Write an equation given:

Vertex: (-1, 5) and x-intercept of 3