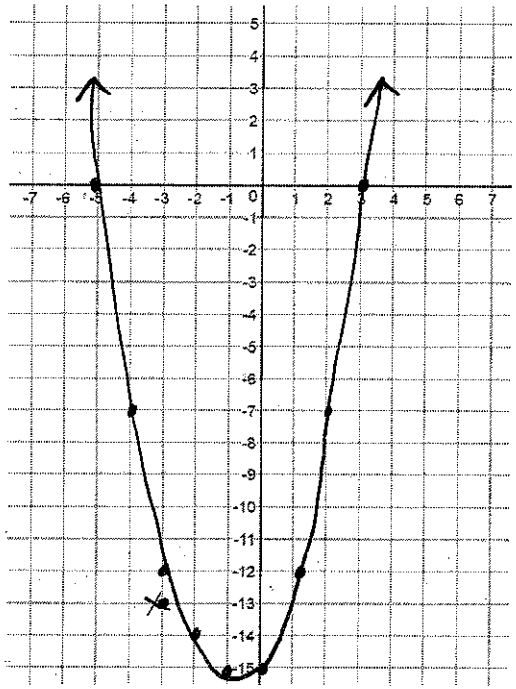
QUADRATICS! They are ALLLLLLLL related!!!!!!

1) Graph the following quadratic

$f(x) = x^2 + 2x - 15$

$\frac{-2}{2(1)} = -1$

X	Y
-3	-12
-2	-15
-1	-16
0	-15
1	-12



Zeros:

-5 AND 3

(-5,0) AND (3,0)

2) Solve using the quadratic formula

$\frac{-2 \pm \sqrt{(2)^2 - 4(1)(-15)}}{2(1)} = \frac{-2 \pm \sqrt{64}}{2} = \frac{-2 \pm 8}{2}$

$\frac{-2+8}{2} = 3$

$\frac{-2-8}{2} = -5$

3) **Factor** the same quadratic

$(x + 5)(x - 3)$

4) How are the factors related to the zeros?

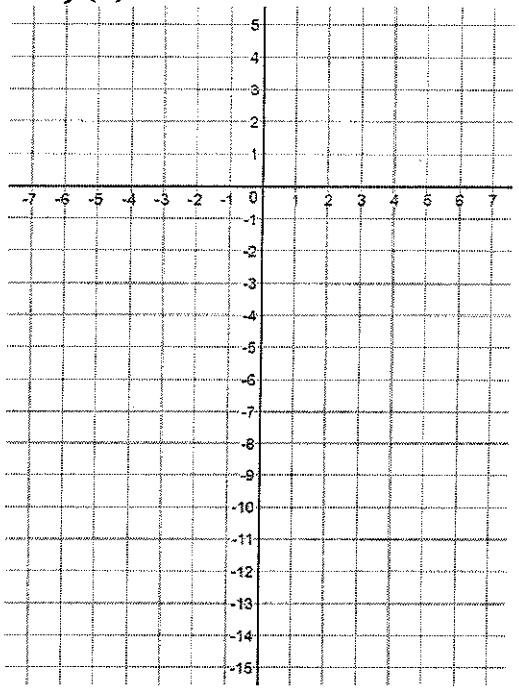
THE FACTORS ARE THE OPPOSITE SIGNS OF THE ZEROS

QUADRATICS! They are ALLLLLLLL related!!!!!!

1) Graph the following quadratic

$f(x) = x^2 + 2x - 15$

X	Y



Zeros:

2) Solve using the quadratic formula

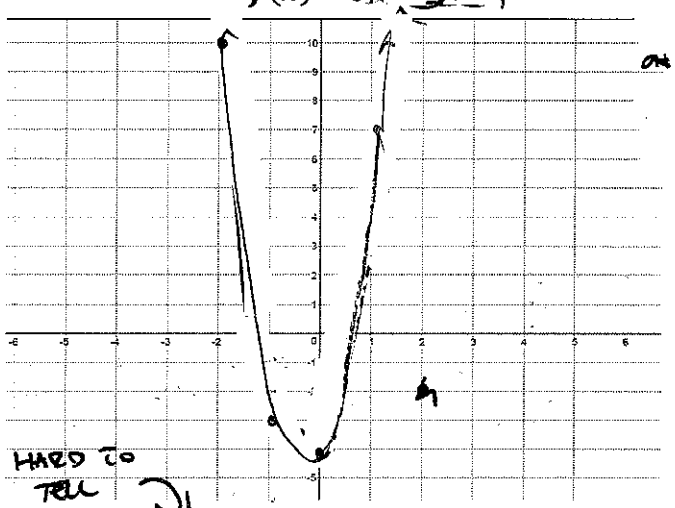
3) **Factor** the same quadratic

4) How are the factors related to the zeros?

5) Graph the following quadratic

$f(x) = 6x^2 + 5x - 4$

X	Y
-2	10
-1	-3
0	-4
1	7



Zeros: ??

-1.5 AND 1/2?

HARD TO TELL

6) Solve using the quadratic formula

$$\frac{-5 \pm \sqrt{(5)^2 - 4(6)(-4)}}{2(6)} = \frac{-5 \pm \sqrt{121}}{12} = \frac{-5 \pm 11}{12}$$

$\frac{-5+11}{12} = \frac{1}{2}$ $\quad$ $\frac{-5-11}{12} = \frac{-4}{3}$

7) **Factor** the same quadratic

$6x^2 + 5x - 4$ $\quad$ 1, 24; 2, 12; 3, 8; 4, 6

$6x^2 + 8x - 3x - 4$

$2x(3x+4) - 1(3x+4)$

$(2x-1)(3x+4)$

8) How are the factors related to the zeros?

$2x - 1 = 0$

$+1 \quad +1$

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

$x = 1/2$

$3x + 4 = 0$

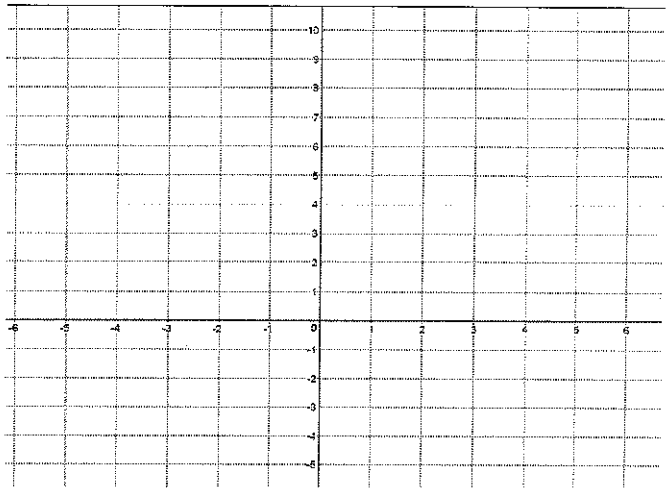
$-4 \quad -4$

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

$x = -4/3$

5) Graph the following quadratic

$f(x) = x^2 + 2x - 15$



Zeros:

6) Solve using the quadratic formula

7) **Factor** the same quadratic

8) How are the factors related to the zeros?