Number Talk:

Which is bigger?

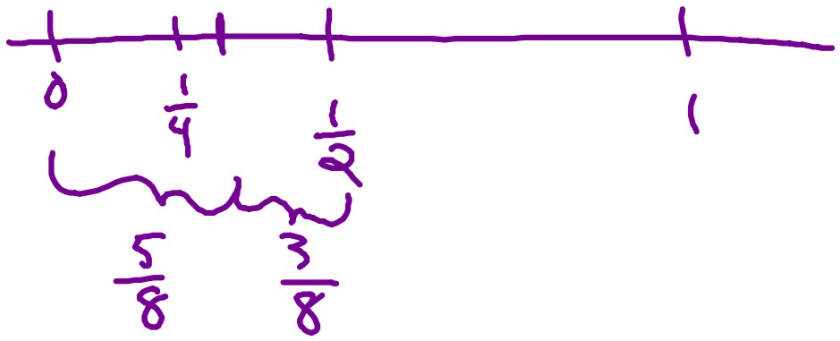
$\frac{3}{4}$ or $\frac{5}{6}$?

$.75 < .82$ ✓✓✓✓

Closer to 0, $\frac{1}{2}$ or 1 ?

$\frac{5}{16}$ closer to $\frac{1}{3}$

$\frac{5}{16}$ vs $\frac{8}{16}$



2.1 Solving Quadratic Equations

A quadratic is a polynomial of the form $ax^2 + bx + c = 0$

- ax^2: quadratic term
- bx: linear term
- c: constant

$x^{(2)}$ indicates there are 2 solutions (sometimes the same one, repeated)

Several ways to solve (finding x-intercepts)

- factoring (book calls it factorizing)
- factor by grouping
- completing the square
- square root method
- quad. formula
- graph
- calculator

Factorizing

* Key is the Zero Factor Property (Product)

> if $ab=0$, then either $a=0$, $b=0$ or a and $b=0$

$(x-a)(x-b)=0$ then $x-a=0$ or $x-b=0$

$ax^2+bx+c=0$

I need 2 factors, a and b so that $a \cdot b = c$ and $a+b =$ middle b

Ex) Factor $x^2+13x+36$

HW
2A P.35 #1,2
2B P.36 #1,3

$(x+4)(x+9)$ two factors

$9 \cdot 4 = 36$

$9+4 = 13$

Factor by Grouping (when $a \neq 1$)

I want to "split" the b term

Ex) $3x^2+2x-5=0$

Find GFC of both

$(3x^2-3x)+(5x-5)=0$

$3x(x-1)+5(x-1)=0$

GCF GCF

$(3x+5)(x-1)=0$

	x	-1	
	$3x^2$	$-3x$	$3x$
	$5x$	-5	5

$a \cdot c$

$3 \cdot -5$

-15

5 $\quad -3$

2

b