

Solving By Factoring

1)  $x^2 + 6x - 16 = 0$   
 $(x - 2)(x + 8) = 0$

or  
 $(x + 8)(x - 2) = 0$

$x - 2 = 0$      $x + 8 = 0$   
 $+2 \quad +2$      $-8 \quad -8$   
 $x = 2$      $x = -8$

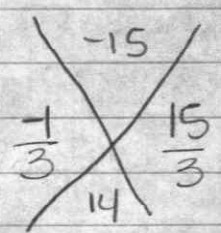
- 16
- 1 -16 → -15
- 7 16 → -15
- 2 -8 → -6
- 2 8 → 6

- 1) Find 2 #'s that multiply to last # (c value) -16
- 2) Add to middle # (b value) 6
- 3) List factors of 16
- 4) Set each = 0 & solve

2)  $2x^2 + 12x - 32 = 0$   
 $2(x^2 + 6x - 16) = 0$

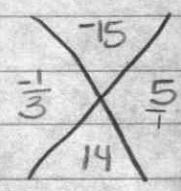
- 1) Factor out GCF
- 2) Same steps as above

3)  $3x^2 + 14x - 5 = 0$



- 1) Top of x is a · c (3 · 5)
- 2) bottom is b
- 3) Repeat steps 1-3 above

$(3x - 1)(x + 5) = 0$   
 $3x - 1 = 0$      $x + 5 = 0$   
 $+1 \quad +1$      $-5 \quad -5$   
 $3x = 1$      $x = -5$   
 $\frac{1}{3} \quad \frac{1}{3}$   
 $x = \frac{1}{3}$



- 15
  - 1 -15 → -14
  - 1 15 → 14
  - 3 -5 → -2
  - 3 5 → 2
- 4) divide factor by a
  - 5) denominator goes to front
  - 6) numerator goes after x