

9-4

## Completing the Square

Step One: Write the problem:  $x^2 + 3x + 21 = 22$

Step Two: Do  $(b/2)^2$  to find what you need C to be.

$$(3/2)^2 = 2.25$$

Step Three: Add or Subtract your answer from step two to C in the original equation and to the other side of the equation.

-18.75;

$$x^2 + 3x + 21 - 18.75 = 22 - 18.75$$

$$x^2 + 3x + 2.25 = 3.25$$

Step Four: Square Root both sides and don't forget to +/- the left side:

$$(x+1.5)^2 = \pm\text{-square root of } 3.25$$

Step five solve with two answers for x:

$$x+1.5 = \pm 1.8$$

$$x + 1.5 = 1.8, \text{ so } x = 0.3$$

OR

$$x + 1.5 = -1.8, \text{ so } x = -3.3$$