

Review of Solving by Completing the Square

$$\text{ex: } m^2 - 12m + 26 = 0$$

$$m^2 - 12m = -26$$

$$m^2 - 12m + 36 = -26 + 36$$

$$(m-6)(m-6) = 10$$

$$\sqrt{(m-6)^2} = \sqrt{10}$$

$$m-6 = \pm \sqrt{10}$$

$$m = \pm \sqrt{10} + 6$$

Steps

- move variables to one side & constants to the other
- Factor out any common # factors from the variable
- Take half of the linear term and square it
- add that # to both sides
- factor the left side
- solve

$$\text{ex: } -14b - 56 = -7b^2$$

$$7b^2 - 14b = 56$$

$$7(b^2 - 2b + 1) = 56 + 7 \leftarrow 7(1) = 7$$

$$7(b-1)(b-1) = 63$$

$$\underline{7(b-1)^2} = \underline{63}$$

$$\sqrt{7(b-1)^2} = \pm \sqrt{9}$$

$$b-1 = \pm 3$$

$$b = 4 \text{ and } -2$$