# 4.5 Completing the Square Day 1

Recall: Solve by taking square roots

$$\sqrt{x^2} = \sqrt{121}$$

$$x = \pm 11$$

This can be solved by taking square roots:

$$\sqrt{(x+3)^2} = \sqrt{121} \rightarrow \text{take } \sqrt{}$$

$$x + 3 = \pm 11 \rightarrow \text{subtract } 3$$

$$-3 \quad -3$$

$$x = -3 \pm 11 \rightarrow \text{There are 2 answers here}$$

$x = -3 + 11$ and $x = -3 - 11$

$\boxed{x = 8}$ and $\boxed{x = -14}$

You try! $\sqrt{(x+5)^2} = \sqrt{144}$

$x + 5 = \pm 12$

$x = -5 \pm 12$

$x = -5 + 12 = 7$

$x = -5 - 12 = -17$

$\boxed{x = 7, -17}$

practice: ① $(x+4)^2 = 16$

② $(x-3)^2 = 7$

③ $(x-5)^2 = -25$

④ $(x+4)^2 = -6$

⑤ $(x-10)^2 = -8$

⑥ $(x+15)^2 = 100$

Recall trinomial factoring:

$x^2 - 8x + 16$

$(x-4)(x-4)$

write as

$(x-4)^2$

$(x^2 + 14x + 49)$

$(x+7)(x+7)$

$(x+7)^2$

Solve by taking square roots

$x^2 + 10x + 25 = 64$

$\sqrt{(x+5)^2} = \sqrt{64}$

$x + 5 = \pm 8$

$\boxed{x = 13, -3}$