COMPLETE THE SQUARE STATIONS

Directions: After you arrange the puzzle pieces in the correct vertical order to make a complete complete-the-square solution, copy down the steps here. Also include a description of each step. You can go to whichever station is not overly crowded, station-order doesn't matter.

Very important: Before you leave a station, mix up the order of the steps for the next group.

Goal: Create an understanding of each step in the CTS (complete the square) process. (Note: goal is *not* to let your groupmates do the thinking and you copy down their final solution, that's not going to help you on tomorrow's quiz. Don't be a lurker.)

STATION 1

Algebraic Step	Reason or description
$X^2 + 10x + 3 = 0$	Original equation.
	Whoo-hoo! Final 2 solutions!

STATION 2

Algebraic Step	Reason or description
$X^2 + 4x + 7 = 0$	Original equation.
	Final 2 solutions! With i !

STATION 3

Algebraic Step	Reason or description
$X^2 - 12x + 4 = 0$	Original equation.
	Final 2 solutions!

STATION 4

Algebraic Step	Reason or description
$X^2 + 6x + 4 = 0$	Original equation.
	Final 2 solutions! (This one wasn't bad.)

STATION 5

Algebraic Step	Reason or description
$X^2 - 10x + 8 = 0$	Original equation.
	Final 2 solutions! (This one wasn't bad.)

STATION 6

Algebraic Step	Reason or description
$X^2 + 12x + 18 = 0$	Original equation.
	Final 2 solutions! I ♡simplifying radicals.

STATION 7

Algebraic Step	Reason or description
$X^2 + 2x + 3 = 0$	Original equation.
	Final 2 solutions! $\sqrt{-1}$ ♡ Alg2.

STATION 1	STATION 2	STATION 3
$x^2 + 10x + 3 = 0$	$x^2 + 4x + 7 = 0$	$x^2 - 12x + 4 = 0$
$x = -5 + \sqrt{22}$ or $x = -5 - \sqrt{22}$	$x = -2 + i\sqrt{3}$ or $x = -2 - i\sqrt{3}$	$x = 6 + 4\sqrt{2}$ or $x = 6 - 4\sqrt{2}$
$(x + 5)^2 = -3 + 25$	$(x + 2)^2 = -7 + 4$	$(x - 6)^2 = -4 + 36$
$x^2 + 10x = -3$	$x^2 + 4x = -7$	$x^2 - 12x = -4$
$x + 5 = \pm\sqrt{22}$	$x + 2 = \pm\sqrt{-3}$	$x - 6 = \pm\sqrt{32}$
$(x + 5)^2 = 22$	$(x + 2)^2 = -3$	$(x - 6)^2 = 32$
$x^2 + 10x + 25 = -3 + 25$	$x^2 + 4x + 4 = -7 + 4$	$x^2 - 12x + 36 = -4 + 36$
$x = -5 \pm\sqrt{22}$	$x = -2 \pm\sqrt{-3}$	$x = 6 \pm\sqrt{32}$
	$x = -2 \pm i\sqrt{3}$	$x = 6 \pm 4\sqrt{2}$

STATION 4	STATION 5	STATION 6
$x^2 + 6x + 4 = 0$	$x^2 - 10x + 8 = 0$	$x^2 + 12x + 18 = 0$
$x = -3 + \sqrt{5}$ or $x = -3 - \sqrt{5}$	$x = 5 + \sqrt{17}$ or $x = 5 - \sqrt{17}$	$x = -6 + 3\sqrt{2}$ or $x = -6 - 3\sqrt{2}$
$(x + 3)^2 = -4 + 9$	$(x - 5)^2 = -8 + 25$	$(x + 6)^2 = -18 + 36$
$x^2 + 6x = -4$	$x^2 - 10x = -8$	$x^2 + 12x = -18$
$x + 3 = \pm\sqrt{5}$	$x - 5 = \pm\sqrt{17}$	$x + 6 = \pm 3\sqrt{2}$
$(x + 3)^2 = 5$	$(x - 5)^2 = 17$	$x + 6 = \pm\sqrt{18}$
$x^2 + 6x + 9 = -4 + 9$	$x^2 - 10x + 25 = -8 + 25$	$(x + 6)^2 = 18$
$x = -3 \pm\sqrt{5}$	$x = 5 \pm\sqrt{17}$	$x^2 + 12x + 36 = -18 + 36$
		$x = -6 \pm 3\sqrt{2}$

STATION 7
$x^2 + 2x + 3 = 0$
$x = -1 + i\sqrt{2}$ or $x = -1 - i\sqrt{2}$
$(x + 1)^2 = -3 + 1$
$x^2 + 2x = -3$
$x + 1 = \pm i\sqrt{2}$
$x + 1 = \pm\sqrt{-2}$
$(x + 1)^2 = -2$
$x^2 + 2x + 1 = -3 + 1$
$x = -1 \pm i\sqrt{2}$