2-5 Reteach to Build Understanding

Completing the Square

1. Complete the square algebraically to solve the function: $x^2 - 6x = -5$.

Step 1. Find c using $\left(\frac{b}{2}\right)^2$. ____

Step 2. Fill in the equation in the perfect trinomial form: $ax^2 + bx + c = d$.

$x^2 - 6x + \square = -5 + \square$

Step 3. Factor the trinomial $x^2 - 6x + 9 = 4$.
Write it in the form of $(x + b)^2$. $(x - \_\_\_\_)^2 = 4$

Step 4. Take the square root of both sides. $\sqrt{(x - \_\_\_\_)^2} = \sqrt{\ }$

Step 5. Solve for x.
$x - 3 = 2$ and $x - 3 = -2$
$x =$ ____ and $x =$ ____

2. Complete the problem to solve the equation.

$x^2 + 4x = 12$	Find the perfect square trinomial.
$x^2 + 4x + \_\_\_ = 12 + \_\_\_$	Use $\left(\frac{b}{2}\right)^2$ to find the value of c, and add it to both sides.
$(x + \_\_\_)^2 = \_\_\_$	Factor the trinomial.
$\sqrt{(x + \_\_\_)^2} = \sqrt{\_\_\_}$	Take the square root of both sides.
$x = \_\_\_$	Solve.

3. Aisha completed the square. But she made a mistake. What mistake did she make? What is the correct solution?

$$x^2 + 16x = -15$$
$$x^2 + 16x + 64 = -15 - 64$$
$$x^2 + 16x + 64 = -79$$
$$(x + 8)^2 = -79$$
$$\sqrt{(x + 8)^2} = 79$$
$$x + 8 = 8.89 \text{ and } x + 8 = -8.89$$
$$x = -0.89, -16.89$$