Example 2 Solve a Linear-Quadratic System by Using Elimination

Solve the system of equations.

$x^2 = y + 5$ **(1)**

$-x + y = 7$ **(2)**

Step 1 Solve so that the ys are on the same side of each equation.

$-x + y = 7$ Equation (2)

$-x = \boxed{} + 7$ Subtract y from each side.

Step 2 Add the equations.

$x^2 = y + 5$

$(+)\ -x = -y + 7$

$\boxed{} - x = \boxed{}$

Step 3 Solve for the remaining variable.

$x^2 - x = 12$ Sum of Equations (1) and (2)

$x^2 - x - \boxed{} = 0$ Subtract 12 from each side.

$(x - 4)(x + \boxed{}) = 0$ Factor.

$x = \boxed{}$ or $x = \boxed{}$ Zero Product Property

Step 4 Solve for the other variable.

$-x + y = 7$ Equation (2) $-x + y = 7$

$-\boxed{} + y = 7$ Substitute x. $-\left(\boxed{}\right) + y = 7$

$y = \boxed{}$ Simplify. $y = \boxed{}$

The two solutions of the system are $\left(\boxed{}, 11\right)$ and $\left(\boxed{}, 4\right)$.