

Lesson 4-14 → System Word Problems with Standard Form Equations

Some Scenarios are $ax + by = c$

Alice buys 2 cheese pizzas and 5 works pizzas for \$165

Bob buys 1 cheese pizza and 2 works pizzas for \$70

$$2x + 5y = 165$$

$$x + 2y = 70$$

$$\begin{array}{r} -2y \quad -2y \\ x = 70 - 2y \end{array}$$

$$2(70 - 2y) + 5y = 165$$

$$140 - 4y + 5y = 165$$

$$140 + y = 165$$

$$y = 25$$

$$\boxed{\text{Works} = \$25}$$

$$x + 2y = 70$$

$$x + 2(25) = 70$$

$$x + 50 = 70$$

$$\boxed{\text{Cheese} = \$20}$$