

4-55

Elimination Method (part 1)

$$\begin{array}{r} 3y + 2x = -2 \\ + -3y + 5x = 16 \\ \hline \end{array}$$

$$\frac{7x}{7} = \frac{14}{7}$$

$$\boxed{x = 2}$$

① Add (or subtract) to eliminate one variable

② Substitute + Evaluate for the other variable

$$3y + 2(2) = -2$$

$$\begin{array}{r} 3y + 4 = -2 \\ -4 \quad -4 \\ \hline \end{array}$$

$$\frac{3y}{3} = \frac{-6}{3}$$

$$\boxed{y = -2}$$

③ Check (using the other equation)

$$-3(-2) + 5(2) = 16$$

$$6 + 10 = 16$$

$$16 = 16 \checkmark$$

④ Write answer as an ordered pair

$$\boxed{\text{P.O.} (2, -2)}$$

Amount / Value (4-57)

Pat was in a fishing competition at Lake Tahoe. She caught some bass and some trout. Each bass weighed three pounds and each trout weighed one pound. Pat caught 30 pounds of fish. She got 5 points for each bass but lost one point for each trout. She scored a total of 42 points. How many bass and how many trout did she catch?

Define

$$\begin{array}{l} \text{bass} = b \\ \text{trout} = t \end{array}$$

① Completely define all variables, terms, and equations

Weight (lbs)

$$\begin{array}{l} \text{bass} = 3b \\ \text{trout} = t \\ 3b + t = 30 \end{array}$$

Value in Points

$$\begin{array}{l} \text{bass} = 5b \\ \text{trout} = -t \\ 5b - t = 42 \end{array}$$

② Solve the system.

$$\begin{array}{r} 3b + t = 30 \\ + 5b - t = 42 \\ \hline \end{array}$$

$$\frac{8b}{8} = \frac{72}{8}$$

$$\boxed{b = 9}$$

$$\begin{array}{r} 3(9) + t = 30 \\ 27 + t = 30 \\ -27 \quad -27 \\ \hline \end{array}$$

$$\boxed{t = 3}$$

③ Check

$$5(9) - (3) = 42$$

$$45 - 3 = 42$$

$$42 = 42 \checkmark$$

④ Sentence Answer:

Pat caught 9 bass and 3 trout.