Two-variable systems: substitution and elimination

Name: _____ Class: _____ Date: _____

Worked example 1

Use substitution to solve the system, then check both equations.

$$\begin{cases} (1)x + (1)y = 7 \\ (-2)x + (1)y = 1 \end{cases}$$

Guided attempt 2

Solve the system. Show elimination and check every original equation.

$$\begin{cases} (2)x + (1)y = 11 \\ (1)x + (-1)y = 1 \end{cases}$$

1. Add the original equations: $(2x + y) + (x - y) = 11 + 1$.
2. Collect: $3x = \square$, so $x = \square$.
3. Back-substitute: $y = 11 - 2(\square) = \square$; check both original equations.

Prerequisite 3

Does $x = 3, y = 4$ solve the displayed system? Check every equation.

$$\begin{cases} (1)x + (1)y = 7 \\ (2)x + (-1)y = 2 \end{cases}$$

A. Yes, every original equation holds.

B. No, checking one equation is enough to reject it.

Prerequisite 4

Does $x = 2, y = 5$ solve the displayed system? Check every equation.

$$\begin{cases} (1)x + (1)y = 7 \\ (2)x + (-1)y = 2 \end{cases}$$

A. Yes, one matching equation is sufficient.

B. No, at least one original equation fails.

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Year 7, lower volume • text pp. 51–60 • textbook lessons 26–30 • 2/2

Name: _____ Class: _____ Date: _____

Independent practice 5

Solve by substitution and check both equations.

$$\begin{cases} (1)x + (-1)y = 2 \\ (2)x + (1)y = 10 \end{cases}$$

Independent practice 6

Solve the system. Show elimination and check every original equation.

$$\begin{cases} (2)x + (3)y = 16 \\ (3)x + (-2)y = 11 \end{cases}$$

Independent practice 7

Solve the system. Show elimination and check every original equation.

$$\begin{cases} (3)x + (-2)y = 0 \\ (2)x + (1)y = 7 \end{cases}$$

Independent practice 8

Solve the system. Show elimination and check every original equation.

$$\begin{cases} (1)x + (1)y = 3 \\ (2)x + (-1)y = 1 \end{cases}$$

Exit question 9

Does $x = 2, y = 3$ solve the displayed system? Check every equation.

$$\begin{cases} (1)x + (2)y = 8 \\ (3)x + (-1)y = 3 \end{cases}$$

A. Yes, every original equation holds.

B. No, checking one equation is enough to reject it.

Exit question 10

To multiply $2x - y = 5$ by 3, which equation is correct?

A. $6x - 3y = 15$

B. $6x - y = 15$

C. $6x - 3y = 5$