

Systems of linear equations

Math / Algebra / Systems of two linear equations in two variables

Prerequisites: Solve one-variable equations and distribute factors

Level: Foundational to intermediate instruction

Coverage: 12 original questions: 1 diagnostic, 3 worked examples, 3 guided, 3 independent, 1 exit ticket and 1 extension. Selected skill coverage, not the complete SAT syllabus.

Version 1.0. Reviewed 2026-09-17. Original content, answer and editorial review. No independent external academic certification or calibrated difficulty.

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Student worksheet

Select one answer per question. Explain the supporting equation, context clue or evidence. Questions 1-10 are practice, 11 is the exit ticket, and 12 is an extension.

Question 1

Solve $x + y = 7$ and $x - y = 1$. What is x ?

- A. 3
- B. 4
- C. 6
- D. 8

Reasoning: _____

Question 2

Solve $y = 2x + 1$ and $x + y = 10$. What is x ?

- A. 2
- B. 3
- C. 4
- D. 9

Reasoning: _____

Question 3

For $2x + 3y = 13$ and $2x - y = 1$, what is y ?

- A. 2
- B. 3
- C. 4
- D. 12

Reasoning: _____

Question 4

An event sells 10 tickets. Adult tickets cost \$8, student tickets cost \$5, and revenue is \$65. How many adult tickets were sold?

- A. 3
- B. 5
- C. 8
- D. 10

Reasoning: _____

Question 5

How many solutions do $y = 2x + 1$ and $y = 2x - 3$ have?

- A. None
- B. One
- C. Two
- D. Infinitely many

Reasoning: _____

Question 6

How many solutions do $x + y = 4$ and $2x + 2y = 8$ have?

- A. None
- B. One
- C. Two
- D. Infinitely many

Reasoning: _____

Question 7

For $x + y = 9$ and $2x - y = 6$, what is $x + 2y$?

- A. 5
- B. 8
- C. 13
- D. 18

Reasoning: _____

Question 8

Which ordered pair satisfies $x - y = 2$ and $3x + y = 10$?

- A. (3, 1)
- B. (1, 3)
- C. (2, 0)
- D. (4, 2)

Reasoning: _____

Question 9

For $x/2 + y = 5$ and $x - y = 1$, what is x ?

- A. 2
- B. 3
- C. 4
- D. 6

Reasoning: _____

Question 10

For $2x + ky = 6$ and $4x + 6y = 12$, which k gives infinitely many solutions?

- A. 1
- B. 2
- C. 3
- D. 6

Reasoning: _____

Question 11 - Exit ticket

For $y = x + 2$ and $y = -x + 6$, what is their intersection?

A. (2, 4)

B. (4, 2)

C. (0, 2)

D. (0, 6)

Reasoning: _____

Question 12 - Extension

How many solutions do $3x + 6y = 9$ and $x + 2y = 4$ have?

- A. None
- B. One
- C. Three
- D. Infinitely many

Reasoning: _____