



Algebra 1 Workbook

Systems of two equations

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MATH

2-STEP PROBLEMS

- 1. Why can't you solve the following 2-step problem?

If $2(x - 1) - 3 = 9 + x$, what is $y + 2$?

- 2. If $5 - 2x = 17$, what is $x - 1$?

- 3. Describe in words how you would solve the following 2-step problem.

If $x - 3 = 5$, what is $x + 5$?

- 4. If $3(2 - x) + 5 = -(4x - 2)$, what is $(x/2) + 1$?

- 5. What are the two steps of a 2-step problem?

- 6. If $2(x + y) - 6 = 3$, what is $x + y - 1$?

- 7. What went wrong in solving the following 2-step problem?

If $2x + 3 = 7$, what is $x/3$?



$$2x + 3 = 7$$

$$2x = 4$$

$$\frac{x}{3} = \frac{4}{3}$$

■ 8. If $a + 2b = 6 - a$ and $b = 1$, what is $a/2$?



- 5. Fill in the blanks with the correct variables x and y if the solution to the system of equations is $(-1, 3)$.

$$-2 _ + _ = 5$$

$$2 _ = 7 - 3 _$$

- 6. What went wrong in the following substitution?

$$y = x - 2$$

$$2y - x = 7$$

Substitution: $2x - 2 - x = 7$

- 7. Find the unique solution to the system of equations.

$$5y = 6 - 2x$$

$$6x + 15y = 18$$



SOLVING WITH ELIMINATION

- 1. What is the easiest way to set up the elimination method for the system of equations? Set up but do not solve the elimination.

$$6y - 3x = 8$$

$$x - 4y = 5$$

- 2. Find the unique solution to the system of equations.

$$2x - y = 5$$

$$-3x + y = 7$$

- 3. Would it be easier to solve the system of equations using the substitution method or the elimination method?

$$7x - 3y = 2$$

$$3y - x = 11$$

- 4. What went wrong in the following elimination?

$$-4x + 3y = 7$$



$$5y - x = 3$$

$$x = 7y - 10$$

■ 9. Find the unique solution to the system of equations.

$$x = 2y - 8$$

$$3y = x + 5$$



SOLVING THREE WAYS

- 1. Explain why using the graphing method would make the following system of equations easy to solve.

$$y = 3x - 4$$

$$y - 3 = 2(x + 1)$$

- 2. Find the unique solution to the system of equations using the elimination method.

$$2y = x + 5$$

$$3x - 2y = 11$$

- 3. In words, describe the graphical solution to a system of equations.

- 4. Find the unique solution to the system of equations using the substitution method.

$$5y + x = 4$$

$$3y - 3x = 6$$



■ 5. Explain why using the substitution method would make the system of equations easy to solve.

$$2y = 6 - 4x$$

$$7 - y = 3x$$

■ 6. In words, describe the solution to a system of equations.

■ 7. Explain why using the elimination method would make the system of equations easy to solve.

$$3y - 2x = 7$$

$$2x = 4 - 6y$$

■ 8. Find the unique solution to the system of equations using the graphing method.

$$y - 2 = -(x + 1)$$

$$y = x + 1$$



