

Worksheets to print out from [sofatutor.com](https://www.sofatutor.com)

Systems of Equations – Word Problems

$16c + 24d = 640$
 $d = 2c$

Substitute $2c$ for d
 $c = 10$

Substitute 10 for c
 $d = 20$

- 1 Explain how to solve systems of equations.
 - 2 Determine the costs of supplies for cats as well as dogs.
 - 3 Solve for the number of cats Jessica could buy supplies for.
 - 4 Describe how to solve a system of equations by graphing.
 - 5 Determine the price of dog as well as cat supplies.
 - 6 Decide which graph belongs to the system of equations.
- + with many hints, answer keys, and solution approaches for all tasks



The complete package, including all tasks, hints, solutions, and solution approaches, is available to all subscribers of [sofatutor.com](https://www.sofatutor.com)

Explain how to solve systems of equations.

Choose the correct statements.

- A
An equation like $3x = 6$ is a system of equations.
- B
A system of equations has at least two variables.
- C
A system of equations has at least two equations.
- D
To solve a system of equations, you can eliminate one variable by substituting in another.
- E
If you graph the lines corresponding to a system of equations, then the solution is given by the intersection of these lines.

Our hints for the tasks

1
from 6

Explain how to solve systems of equations.

1. Hint

Here is an example of a system of equations:

- $2x + 3y = 7$
 - $x = 2y$
-

2. Hint

In the system of equations given in the first hint, x equals $2y$. So plug in $2y$ for x in the first equation to get $2(2y) + 3y = 7$.

3. Hint

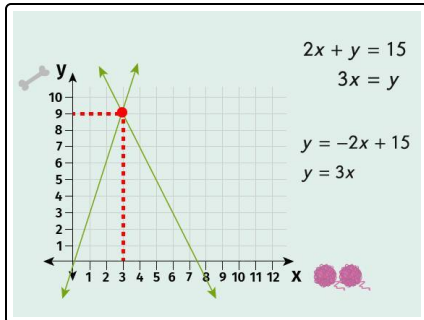
Keep in mind that you have to find solutions which satisfy all equations.

Solutions and solution approaches for the tasks

1
from 6

Explain how to solve systems of equations.

Answer key: B, C, D, E



A system of equations is not only one equation with one variable, but two equations with two variables, or more equations with more variables!

Remember that solutions to a system of equations must satisfy every equation in the system. Not just one equation in the system.

How can we solve a system of equations?

We can eliminate one variable; let's have a look at the following

example:

- $2x + 3y = 7$
- $x = 2y$

Substituting $2y$ for x in the first equation gives $4y + 3y = 7y = 7$. Dividing by 7 gives us $y = 1$, and thus $x = 2 \times 1 = 2$.

We can also get the solution by graphing: we draw the lines corresponding to the equations in a coordinate system. The point of intersection gives us the solution, as pictured above!