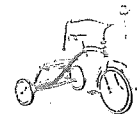




## Another Look at Trike Wars



Discovering another method to find solutions from yesterday.

Yesterday one of our solutions was hard to see exactly. Which one was that?

Why couldn't we find the solution exactly?

What was our guess?

What facts do we know about this system?

Any ideas of how we could solve this system another way besides graphing?

Solving systems of equations by \_\_\_\_\_.

The Substitution Method:

Solving one of the trike wars systems by substitution: Let's start with one we know the answer to already.

### Steps to Solving a Linear System by Substitution

1.

2.

3.

4.

5.

6.

Now lets try the one we didn't know the answer to exactly:

How close was our guess from yesterday?

Solve the system of linear equations by substitution. Check your answer and state the type of system.

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

Type:

Check:

2)  $y = 2x + 3$   
 $x = -4$

Type:

Check:

$$\begin{aligned} 3) \quad x - 3y &= 9 \\ x + 4y &= 2 \end{aligned}$$

Type:

Check:

$$\begin{aligned} 4) \quad 5x - 3y &= 22 \\ -4x + y &= -19 \end{aligned}$$

Type:

Check:

Solving special linear systems by substitution. Check your answer and state the type of system.

$$\begin{aligned} 1) \quad x + y &= 3 \\ -4x - 4y &= 12 \end{aligned}$$

Type:

Check:

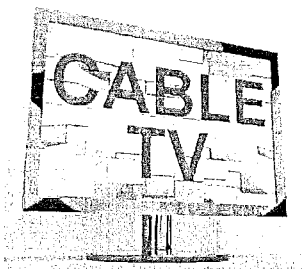
$$\begin{aligned} 2) \quad 3x - 3y &= -15 \\ -x + y &= 5 \end{aligned}$$

Type:

Check:

Solve the real-world situation by using substitution.

A cable television provider has a \$55 setup fee and charges \$82 per month. A different cable provider has \$160 setup fee and charges \$67 a month.



- a) Identify your variables.
- b) Write the system of equations that can be used to represent this situation.
- c) In how many months will both providers cost the same? What will the cost be?
- d) If you plan to move in 12 months, which provider would be less expensive? Explain.

*Ticket out the Door*

*What do you like about solving a system by the substitution method? What do you dislike?*