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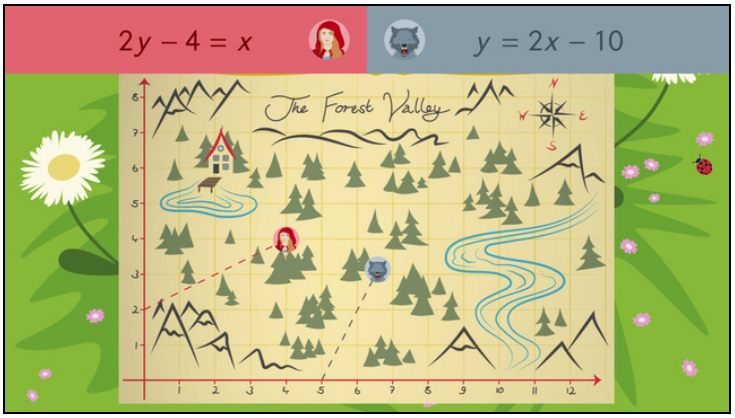
Solving Systems of Equations by Graphing



1. **Describe how to change $2y - 4 = x$ into slope-intercept form.**
2. Describe how to graph $y = \frac{1}{2}x + 2$.
3. Use a graph to show the paths of Red Riding Hood and the Wolf.
4. Determine whether or not Red Riding Hood and her grandmother meet.
5. Decide if the lines have a point of intersection.
6. Analyze whether or not the lines have a point of intersection with the line of $y = -\frac{1}{3}x + 2$
+ with lots of tips, answer keys, and detailed answer explanations for all of the problems.

The complete package, **including all problems, hints, answers, and detailed answer explanations** is available for all sofatutor.com subscribers.

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Describe how to change $2y - 4 = x$ into slope-intercept form.

Fill in the blanks.

$$2y - 4 = x$$

2 | $(0, 2)$ | $1 \div 2x$ | $1 \div 2$ | 4 | $(0, 0.5)$ | $y = 1 \div 2x + 4$ | 4 | $y = 1 \div 2x + 2$ | $(2, 0)$

First, we add _____[1] on both sides of the equation:

$2y = x +$ _____[2]

Next we divide both sides by _____[3]:

_____[4]

- The slope is $m =$ _____[5].
- The y-intercept is located at _____[6].

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Hints for solving these problems

1 of 6

Describe how to change $2y - 4 = x$ into slope-intercept form.

Hint #1

The slope-inercept form is $y = mx + b$.

- m is the slope
- b is the y-coordinate of the y-intercept

Hint #2

The x-coordinate of the y-intercept is always 0.

Hint #3

To manipulate the equation use opposite operations:

- The opposite operation of addition is subtraction, and vice versa.
- The opposite operation of multiplication is division, and vice versa.

Hint #4

Whatever you do to one side of the equation, you have to do to the other side.

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Answers and detailed answer explanations for these problems

1 of 6

Describe how to change $2y - 4 = x$ into slope-intercept form.

Answer key: 1: 4 // 2: 4 // 3: 2 // 4: $y = 1 \div 2x + 2$ // 5: $1 \div 2$ // 6: $(0, 2)$

To graph a linear equation, it is helpful to manipulate the equation into slope-intercept form:

$y = mx + b$

- m is the slope
- b is the y-intercept

Because Red Riding Hood's path, $2y - 4 = x$, is not in slope-intercept form, we have to manipulate this equation:

1. adding 4 leads to $2y = x + 4$

2. dividing by 2 gives us the slope-intercept-form, $y = \frac{1}{2}x + 2$

$m = \frac{1}{2}$ is the slope and $(0, 2)$ the y-intercept.

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