

Lesson 3.3 Evaluate Linear Equations with Two Variables (Day 2)

Math Warm Up

Wednesday

My Thinking

Correct/Compare

3) Which step is the first *incorrect* step in the solution shown below?

Solve: $2(x + 2) = 6x - 12$

Step 1: $2x + 4 = 6x - 12$

Step 2: $-4x - 2 = 12$

Step 3: $-4x = 10$

Step 4: $x = -2.5$

- A) Step 1
- B) Step 2
- C) Step 3
- D) Step 4

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Wednesday

My Thinking

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- ✓ B) Step 2
- C) Step 3
- D) Step 4

Lesson 3.3 Evaluate Linear Equations with Two Variables (Day 2)

Objective

TSW

- represent a relationship between two variables by creating a table of values.



▶ Linear equations can be used to solve mathematical and real-world problems. A linear equation with one variable can have one solution, no solution, or infinitely many solutions.

Common Core State Standards 8EE 5 Compare two different proportional relationships represented in different ways.

Mathematical Practices 1 Solve problems/persevere 2 Reason 4 Model Mathematics 7 Look for and use structure

Lesson 3.3 Evaluate Linear Equations with Two Variables (Day 2)

Guided Practice

Example 8 Write tables of values for linear equations with two variables.

Solve. Show your work.

- a) Create a table of x - and y -values for the equation $\frac{y}{2} = \frac{3}{2}x + 2$. Use integer values of x from -1 to 1 .

Math Note

Remember to substitute 0 as one of the integers.

Lesson 3.3 Evaluate Linear Equations with Two Variables (Day 2)

Example 8

Write tables of values for linear equations with two variables.

Solution

Substitute -1 for x into the equation:

$$\frac{y}{2} = \frac{3}{2}(-1) + 2$$

$$\frac{y}{2} = \frac{1}{2}$$

Simplify.

$$\frac{y}{2} \cdot 2 = \frac{1}{2} \cdot 2$$

Multiply both sides by 2.

$$y = 1$$

Simplify.

Substitute 0 for x into the equation:

$$\frac{y}{2} = \frac{3}{2}(0) + 2$$

$$\frac{y}{2} = 2$$

Simplify.

$$\frac{y}{2} \cdot 2 = 2 \cdot 2$$

Multiply both sides by 2.

$$y = 4$$

Simplify.

Substitute 1 for x into the equation:

$$\frac{y}{2} = \frac{3}{2}(1) + 2$$

$$\frac{y}{2} = \frac{7}{2}$$

Simplify.

$$\frac{y}{2} \cdot 2 = \frac{7}{2} \cdot 2$$

Multiply both sides by 2.

$$y = 7$$

Simplify.

So the table of values is:

x	-1	0	1
y	1	4	7

When solving a linear equation in two variables, you know that each x -value has a corresponding y -value. So every equation has an infinite number of solutions. One way to represent some of these solutions is with a table of values.



Lesson 3.3 Evaluate Linear Equations with Two Variables (Day 2)

Guided Practice

Example 8 Write tables of values for linear equations with two variables.

b) Complete the table of values for the equation $8y = 5(x - 4)$.

x	2	?	6
y	?	0	?

Lesson 3.3 Evaluate Linear Equations with Two Variables (Day 2)

Guided Practice

Example 8 Write tables of values for linear equations with two variables.

Solution

Substitute 2 for x into the equation:

$$8y = 5(2 - 4)$$

$$8y = -10$$

$$8y \div 8 = -10 \div 8$$

$$y = -1.25$$

Simplify.

Divide both sides by 8.

Simplify.

Substitute 0 for y into the equation:

$$0 = 5(x - 4)$$

$$0 \div 5 = 5(x - 4) \div 5$$

$$0 = x - 4$$

$$0 + 4 = x - 4 + 4$$

$$4 = x$$

Divide both sides by 5.

Simplify.

Add 4 to both sides.

Simplify.

Substitute 6 for x into the equation:

$$8y = 5(6 - 4)$$

$$8y = 10$$

$$8y \div 8 = 10 \div 8$$

$$y = 1.25$$

Simplify.

Divide both sides by 8.

Simplify.

So the table of values is:

x	2	4	6
y	-1.25	0	1.25

Lesson 3.3 Evaluate Linear Equations with Two Variables (Day 1)

Your Turn

Guided Practice

Create a table of x - and y -values for each equation. Use integer values of x from 1 to 3.

6 $2y = 1.2x + 1$

7 $4y - 11x = 6$

2 minute Commercial Break



Decide...

Partner Wal-Mart

Partner Target

2 minute Commercial Break



Decide...

Partner Wal-Mart

*Explain Thinking for
Number 6

*Write Table of Values
for Partner's Thinking

Number 7 on

Whiteboard

Partner McDonald

*Explain thinking for
Number 7

*Write Table of Values
of Partners Thinking

Number 6 on

Whiteboard

Lesson 3.3 Evaluate Linear Equations with Two Variables (Day 1)

Your Turn

Guided Practice

Create a table of x - and y -values for each equation. Use integer values of x from 1 to 3.

6 $2y = 1.2x + 1$

7 $4y - 11x = 6$

6

x	1	2	3
y	1.1	1.7	2.3

7

x	1	2	3
y	4.25	7	9.75

Lesson 3.3 Evaluate Linear Equations with Two Variables (Day 2)

Independent Practice #13-20

Challenge #24

IXL- Multiple Choice Game
360 Degree Math

Homework

Name: _____

Practice 3.3 Day 2

Create a table of x - and y -values for each equation. Use integer values of x from 1 to 3.

13 $y = \frac{1}{4}(8 - x)$

x	1	2	3
y			

14 $x + 7 = \frac{1}{2}(y - 5)$

x	1	2	3
y			

15 $-4y = 2x + 5$

x	1	2	3
y			

16 $\frac{1}{2}(x + 4) = \frac{1}{3}(y + 1)$

x	1	2	3
y			

Complete the table of x - and y -values for each equation.

17 $y = 5(x + 3)$

x	0	1	2
y	?	?	?

18 $\frac{x}{4} + y = 1$

x	2	?	?
y	?	0	-0.5

19 $3x - 4y = \frac{5}{3}$

x	?	-2	-1
y	$-\frac{2}{3}$?	?

20 $5(y + 4) = 8x$

x	?	?	?
y	-4	12	28

Course 3

Name: _____

Wednesday Homework
No solution, One solution and Infinite solutions

Identify whether each equation has one solution, no solution, or an infinite number of solutions. Show your work.

1. $4x - \frac{5-2x}{5} = \frac{3}{5}$	2. $2x + 5 = -4\left(-\frac{5}{4} - \frac{1}{2}x\right)$
3. $4x + 5 = 2x - 7$	4. $\frac{1}{4}(x + 2) - 2 = 0.5$

Write each decimal as a fraction. Show your work.

5. $0.\overline{5}$	6. $0.\overline{7}$
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Course 3

Lesson Check — #13 Create Table of Values

