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

## Math Warm Up

| Monday | My Thinking | Correct/Compare |
| --- | --- | --- |

Read each question carefully.

AZ-8.EE.C.7a Give examples of linear equations in one variable with one solution, infinitely many solutions, or no solutions. Show which of these possibilities is the case by successively transforming the given equation into simpler forms, until an equivalent equation of the form x = a, a = a, or a = b results (where a and b are different numbers). [From cluster: Understand the connections between proportional relationships, lines, and linear equations]

1) Which equation has exactly one solution?

A) $n - 2n + 1 = 2n - 3n - 1$

B) $2n - n = 2n - 3n$

C) $1 - n - 2n = 1 - 2n - n$

D) $n - (1 - 2n) = 2n + (n - 1)$

# Lesson 3.2 Identifying the Number of Solutions in Linear Equations (Day 2)

| Monday | My Thinking | Correct/Compare |
|---|---|---|
| 1) Which equation has exactly one solution?<br><br>A) $n - 2n + 1 = 2n - 3n - 1$<br><br>✔ B) $2n - n = 2n - 3n$<br><br>C) $1 - n - 2n = 1 - 2n - n$<br><br>D) $n - (1 - 2n) = 2n + (n - 1)$ | | |

# Lesson 3.2 Identifying the Number of Solutions in Linear Equations (Day 2)

## Objective

TSW

- represent a relationship

between two variables by substituting value for x.


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 1)

Guided Practice

**Example 7** **Evaluate linear equations with two variables.**

Find the value of $y$ when $x = 7$ in each of the equations.

a) $y = \frac{x - 5}{2}$

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

Guided Practice

**Example 7** **Evaluate linear equations with two variables.**

Find the value of $y$ when $x = 7$ in each of the equations.

a) $y = \frac{x - 5}{2}$

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

Guided Practice

**Example 7** **Evaluate linear equations with two variables.**

**Find the value of $y$ when $x = 7$ in each of the equations.**

a) $y = \frac{x - 5}{2}$

**Solution**

$y = \frac{7 - 5}{2}$ Substitute 7 for $x$.

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

$y = 1$ Simplify.

**Math Note**

Observe that in a), $y$ is already expressed in terms of $x$. You just have to substitute for $x$ to evaluate $y$. In b) and c), when you substitute a value for $x$, you get an equation with one variable $y$. You have to solve this one-variable equation to find the value of $y$.

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

Guided Practice

**Example 7** **Evaluate linear equations with two variables.**

b) $3y + 4 = 2x$

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

Guided Practice

**Example 7** **Evaluate linear equations with two variables.**

b) $3y + 4 = 2x$

**Solution**

| | |
|---|---|
| $3y + 4 = 2(7)$ | Substitute 7 for x. |
| $3y + 4 - 4 = 14 - 4$ | Subtract 4 from both sides. |
| $3y = 10$ | Simplify. |
| $\frac{3y}{3} = \frac{10}{3}$ | Divide both sides by 3. |
| $y = 3\frac{1}{3}$ | Simplify. |

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

Guided Practice

**Example 7** **Evaluate linear equations with two variables.**

c) $x = \frac{9}{2}y - 15.5$

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

Guided Practice

**Example 7** **Evaluate linear equations with two variables.**

c) $x = \frac{9}{2}y - 15.5$

**Solution**

| | |
|---|---|
| $7 = \frac{9}{2}y - 15.5$ | Substitute 7 for $x$. |
| $7 + 15.5 = \frac{9}{2}y - 15.5 + 15.5$ | Add 15.5 to both sides. |
| $22.5 = \frac{9}{2}y$ | Simplify. |
| $22.5 \cdot 2 = \frac{9}{2}y \cdot 2$ | Multiply both sides by 2. |
| $45 = 9y$ | Simplify. |
| $45 \div 9 = 9y \div 9$ | Divide both sides by 9. |
| $5 = y$ | Simplify. |

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

Your Turn

## Guided Practice

**Find the value of $y$ when $x = -4$.**

3. $y = 7 + 3x$

4. $\frac{1}{3}y = 2\left(x - \frac{1}{6}\right)$

5. $-6x - y = 17.75$

# 2 minute Commercial Break

Decide…

Partner Taco Bell

Partner McDonalds

# 2 minute Commercial Break

Decide…

Partner Taco Bell

*Coach or Praise Partner

*Write Responses on Whiteboard

Partner McDonald

*Explain thinking for Problem 3, 4, 5

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

Your Turn

## Guided Practice

**Find the value of $y$ when $x = -4$.**

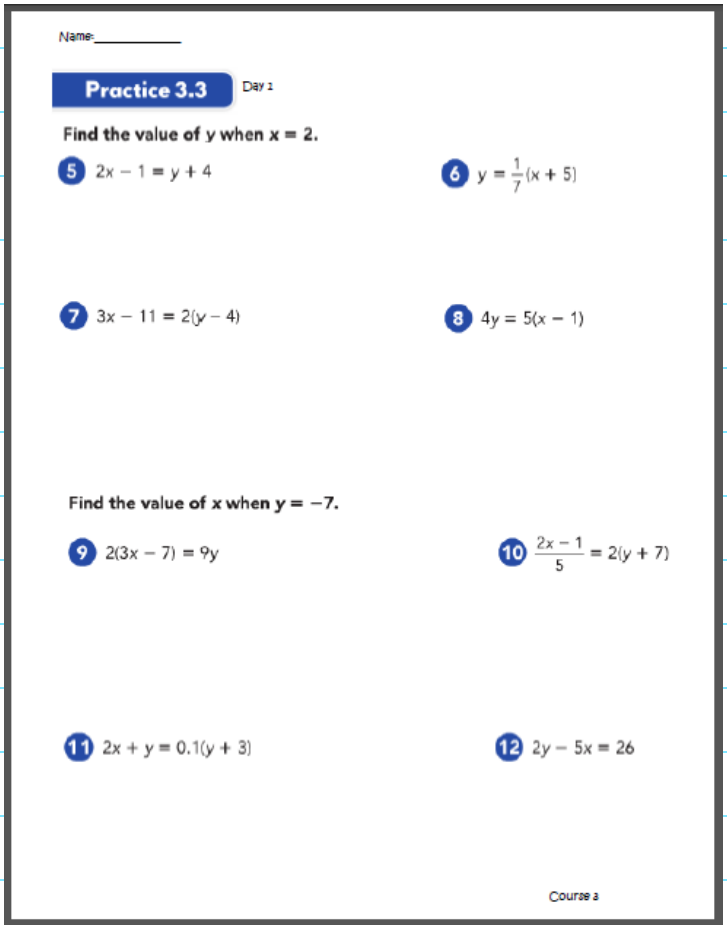
3. $y = 7 + 3x$ $-5$

4. $\frac{1}{3}y = 2\left(x - \frac{1}{6}\right)$ $-25$

5. $-6x - y = 17.75$ $6.25$

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

## Independent Practice #5-12



Name:_____

**Practice 3.3** Day 1

**Find the value of y when x = 2.**

5. $2x - 1 = y + 4$

6. $y = \frac{1}{7}(x + 5)$

7. $3x - 11 = 2(y - 4)$

8. $4y = 5(x - 1)$

**Find the value of x when y = −7.**

9. $2(3x - 7) = 9y$

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

11. $2x + y = 0.1(y + 3)$

12. $2y - 5x = 26$

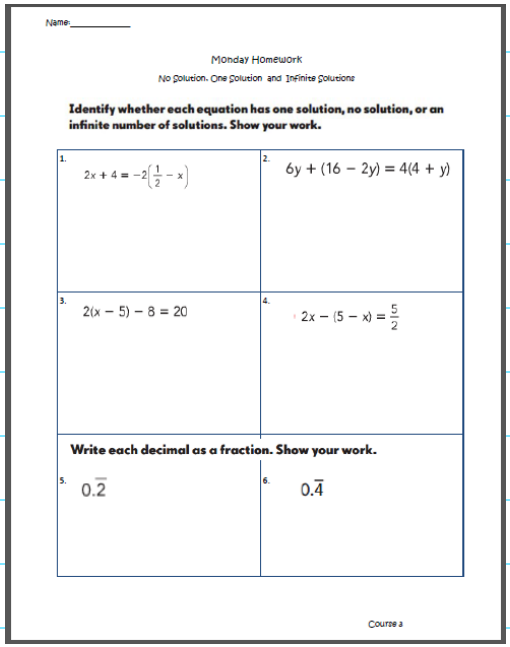
Course 3

## Challenge

IXL- Multiple Choice Game

360 Degree Math

## Homework



Name:_____

Monday 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. $2x + 4 = -2\left(\frac{1}{2} - x\right)$

2. $6y + (16 - 2y) = 4(4 + y)$

3. $2(x - 5) - 8 = 20$

4. $2x - (5 - x) = \frac{5}{2}$

**Write each decimal as a fraction. Show your work.**

5. $0.\overline{2}$

6. $0.\overline{4}$

Course 3

Lesson Check –#5 Find the value of y when substitute value for x