Warm-up: Solve these

$g + 9 = -4$

$12 = m - 16$

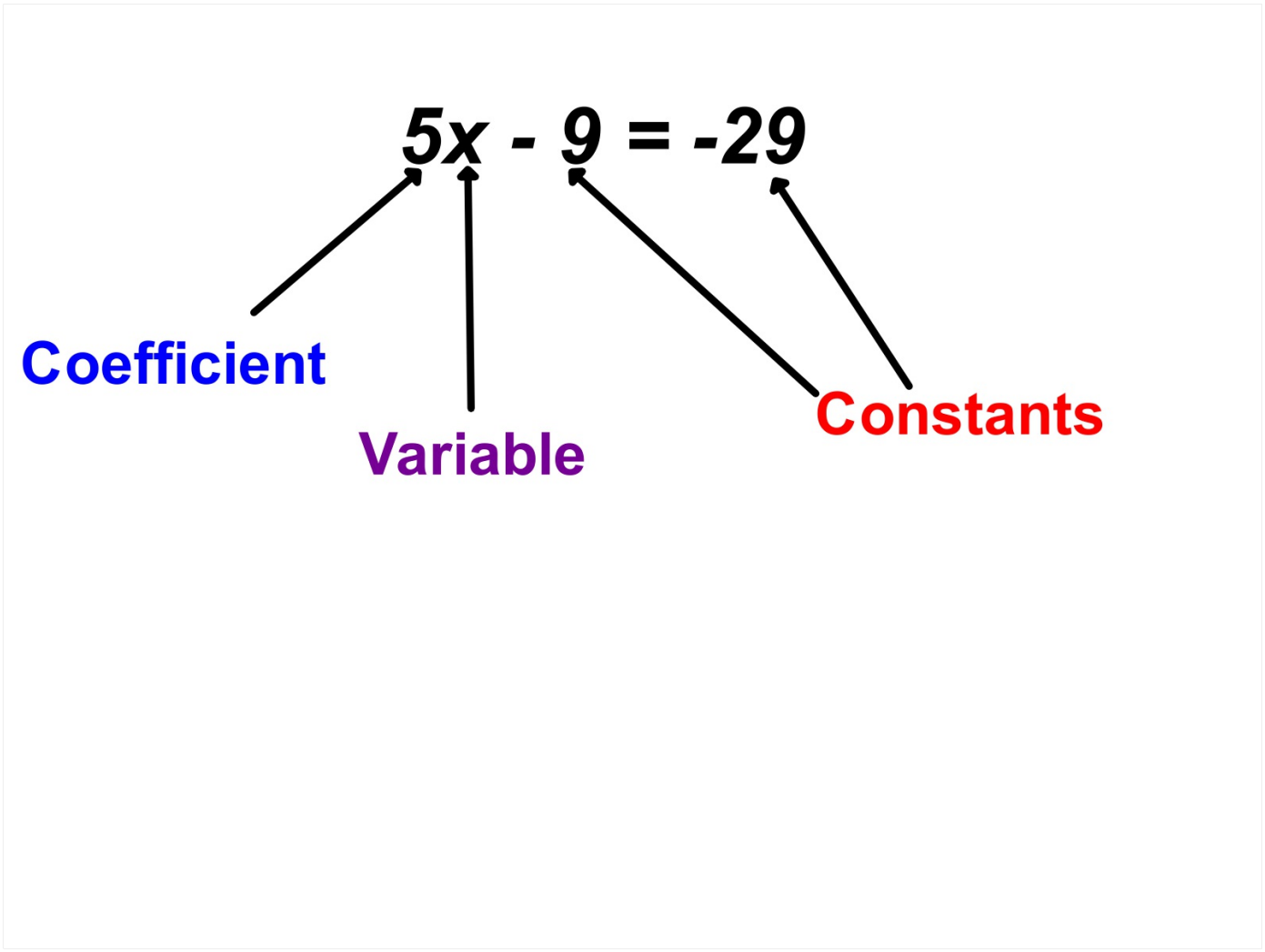
$5x = 21$

$-8 = \frac{p}{-5}$

$\frac{-2}{3}y = -9$

Lesson 3.5

Learning Target: Solve Two-Step Equations


5x - 9 = -29
Coefficient
Variable
Constants

$$5x - 9 = -29$$

Steps for Solving Equations

First Step: Cancel the Constant

Simplify using Addition or Subtraction

Second Step: Cancel the Coefficient

Simplify using Multiplication or Division

Identify what you will need to cancel
in order to ISOLATE the variable.

2 Steps

1st: underline the Constant (this cancels first + / −)

2nd: circle the Coefficient (this cancels second * / ÷)

$$5x - 9 = -29$$

Identify what you will need to cancel
in order to ISOLATE the variable.

2 Steps

1st: underline the Constant (this cancels first + / −)
2nd: circle the Coefficient (this cancels second * / ÷)

$3k - 2 = 1$

$5 + 5r = 35$

$\frac{x}{2} - 4 = -9$

$-15 = -4 + 5x$

$\frac{8 + b}{-4} = -9$

$-10 = 10 + 7m$

$5x - 9 = -29$

Steps for Solving Equations

First Step: Simplify using Addition or Subtraction

$$5x - 9 = -29$$
$$+9 \quad +9$$

Second Step: Simplify using Multiplication or Division

$$\frac{5x}{5} = \frac{-20}{5}$$

$$x = -4$$

Solve 2-Step Equations

1st: Cancel the Constant with + / −

2nd: Cancel the Coefficient with * / ÷

$5 + 5r = 35$

1st: $-5 \quad -5$

$5r = 30$

2nd: $\frac{5}{5} \quad \frac{30}{5}$

$r = 6$

$\therefore$

$\frac{x}{2} - 4 = -9$

1st: $+4 \quad +4$

$\frac{2 \cdot x}{2} = -5 \cdot 2$

2nd:

$x = -10$

Solve 2-Step Equations

1st: Cancel the Constant with +/-

2nd: Cancel the Coefficient */—

$-15 = -4m + 5$

1st: $-5 \quad -5$

$-20 = -4m$

2nd: $\frac{-20}{-4} = \frac{-4m}{-4}$

$5 = m$

$\frac{8}{-4} + \frac{b}{-4} = -9$

1st: $-8 \quad -8$

$\frac{-4 \cdot b}{-4} = -17(-4)$

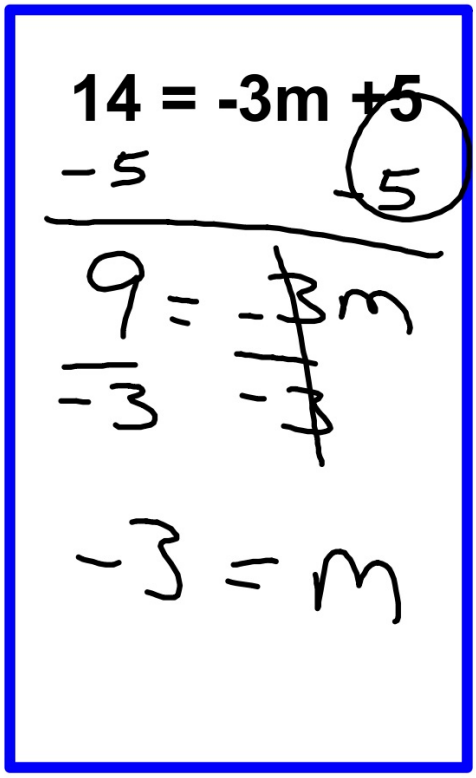
2nd:

$b = 68$

$14 = -3m + 5$

First Step:
Simplify using
Addition or Subtraction

Second Step:
Simplify using
Multiplication or Division



Homework

pg 112 1-17 all

Lesson 3.5 Continued

Multi-Step Equations

Writing Equations

A cell phone company charges a monthly fee plus $0.25 for each text message. The monthly fee is $30.00 and you owe $59.50. How many text messages did you have?

Writing Equations

It costs $3.00 to rent bowling shoes. It costs $2.50 for each game you play. If you have $10.00, how many games can you play?

Solve a 2-Step Equation with fractions

Solve $\frac{x}{8} - \frac{1}{2} = -\frac{7}{2}$. Check your solution.

Solve a 2-Step Equation with fractions

Clear the Fractions

$$\frac{x}{8} - \frac{1}{2} = -\frac{7}{2}.$$

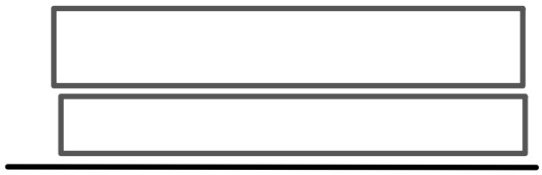
Find the least common multiple

(what can 8 and 2 both divide into?)

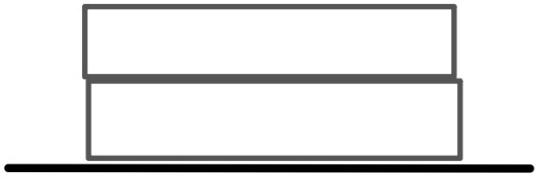
Solving Multi-Step Equations
Simplifying First!

$$3y - 8y + 10 = 30$$

- Combine Like Terms



- Cancel Constant with +/-



- Cancel Coefficient with */÷

Check:

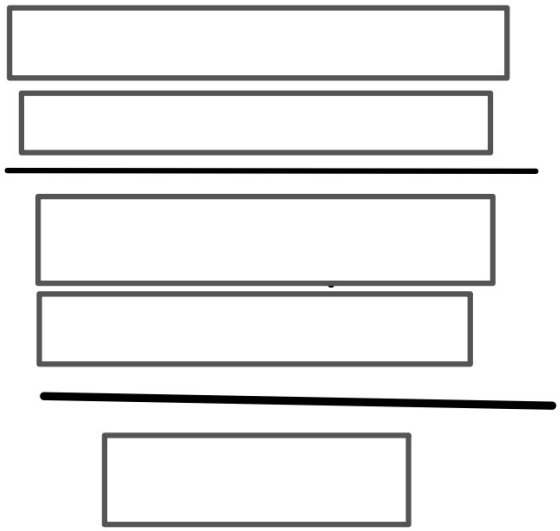
Solving Multi-Step Equations

Using the Distributive Property

$$-40 = -8(y + 9)$$

- Distributive Property
- Cancel Constant with +/-
- Cancel Coefficient with */÷

Check:



Solving Multi-Step Equations

Challenge Equations!

$$2(1 - 5x) + 4 = -8$$

- Distributive Property
- Combine Like Terms
- Cancel Constant with +/-
- Cancel Coefficient with */÷

Check:

Homework

Pg 112 and 113

#21-27 odd

#29-34 all

#36 and 37