Solving Proportions

agenda

Warm-Up (SUGAR!!)

Notes p. 17

HW: #1-11

reminders

Open House Tues night

Quiz Thursday

Signed Progress Reports due Friday

Test Corrections due Wednesday 9/24 5PM

Essential Question

How do I solve a proportion?

Warm-Up Monday

Watch the video and answer the following questions in the "Monday" box.

1. How many sugar packets do you think are inside a 20-oz bottle of soda?

2. What information do you need to find the exact amount of sugar?

Solving Proportions

1. How many sugar packets do you think are inside a 20-oz bottle of soda?

2. What information do you need to find the exact amount of sugar?

20 oz coke

Nutrition Facts

Serving Size 1 bottle
Servings Per Container 1

Amount Per Serving
Calories 240

	% Daily Value*
Total Fat 0g	0%
Sodium 75mg	3%
Total Carbohydrate 65g	22%
Sugars 65g	
Protein 0g	

Not a significant source of fat calories, saturated fat, trans fat, cholesterol, fiber, vitamin A, vitamin C, calcium and iron.

*Percent Daily Values (DV) are based on a 2,000 calorie diet.

65 grams of sugar = 1 20 oz. bottle of Coca Cola

packet of sugar

Nutrition Facts

Serving size 1 Teaspoon (4g)

Amount Per Serving
Calories 15

	% Daily Value*
Total Fat 0g	0%
Sodium 0mg	0%
Total Carbohydrate 4g	1%
Sugars 4g	
Protein 0g	

*Percent Daily Values are based on a 2,000 calorie diet.

4 grams of sugar = 1 packet of sugar

W	coke O	packet N
grams	65	4
packets	x	1

$\frac{65}{4} = \frac{4x}{4}$

$16.25 = x$

Solving Proportions

Final Question:

Will you continue to drink soda? Explain.

Solving Proportions p. 17

EQ: How do I solve problems using proportional relationships?

PART to PART

1. In Mrs. Gilliland's first period Algebra I class, the ratio of boys to girls is 3:2. If there are 18 boys in the class, how many girls are there in the class?

There are 12 girls in the class.

What	Old	New
girls	2	x
boys	3	18

RATIO

$2 \cdot 18 = 3x$

$\frac{36}{3} = \frac{3x}{3}$

$12 = x$

PART to WHOLE

2. The ratio of boys to girls in track is 5 to 4. If there are 54 students in track, how many are boys? (Be careful!) How many are girls?

30 boys

54 − 30 = 24 girls

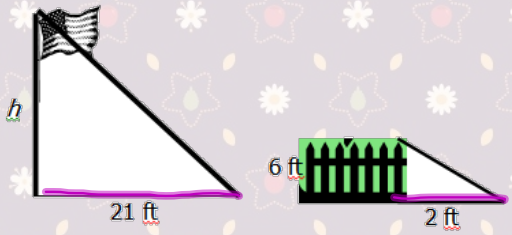
W	O	N
boys	5	x
students	9	54

$5 \cdot 54 = 9x$

$\frac{270}{9} = \frac{9x}{9}$

3. A six foot tall fence post casts a shadow 2 feet long. At the same time, of day, a flagpole casts a shadow 21 feet long. How tall is the flagpole?

The flagpole is 63 ft tall.



W	O (shadow)	N (height)
flagpole	21	h
fence	2	6

$\frac{126}{2} = \frac{2h}{2}$

63 ft

SOLVING PROPORTIONS P.17

EQ: How do I solve problems using proportional relationships?

Solve each proportion. fraction=fraction

CROSS MULTIPLY

4. $\frac{2}{3}=\frac{(x+4)}{x}$

$2x = 3(x+4)$

$2x = 3x+12$

$-2x \quad -2x$

$0 = x+12$

$-12 \quad -12$

$-12 = x$

5. $\frac{3}{5}=\frac{(x+2)}{6}$

$3 \cdot 6 = 5(x+2)$

$18 = 5x+10$

$-10 \quad -10$

$\frac{8}{5} = \frac{5x}{5}$

6. $\frac{(5+y)}{(y-3)}=\frac{14}{10}$

$10(5+y) = 14(y-3)$

$50+10y = 14y-42$

$-10y \quad -10y$

$50 = 4y-42$

$+42 \quad +42$

$\frac{92}{4} = \frac{4y}{4}$

$23 = y$

7. $\frac{(m+9)}{5}=\frac{(m+10)}{11}$

$11(m+9) = 5(m+10)$

$11m+99 = 5m+50$

$-5m \quad -5m$

$6m+99 = 50$

$-99 \quad -99$

$\frac{6m}{6} = \frac{-49}{6}$

Algebra I - Unit 1: Topic 3 – Solving Proportions

Practice - Solving Proportions **pp 114-120**

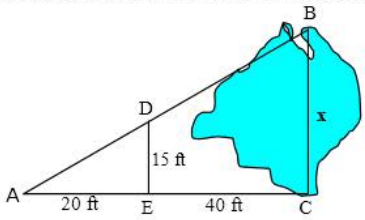
Name _____ Date _____ Per _____

Solve each proportion.

1. $\frac{t-5}{4}=\frac{3}{2}$

2. $\frac{1}{y-3}=\frac{3}{y-5}$

3. Triangle *ABC* is similar to Triangle *ADE*. What is, *x*, the distance across the lake from Point *B* to Point *C*?



4. A museum has scale models representing different time periods in history. A scale in which one inch in the model represents two feet is used to construct the models. The museum's sculptor wants to build a model of an 21-foot-tall tree for one of the exhibits. How tall should she make the model of the tree?

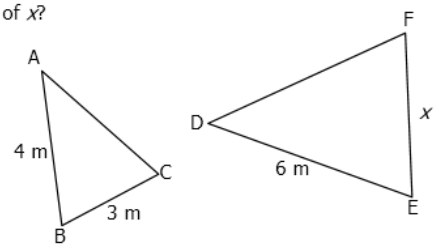
5. STOP MART received a delivery of 1080 bottles of Coke and Diet Coke. If the ratio of Coke delivered to Diet Coke delivered was 6:3, how many bottles of Diet Coke were delivered?

6. $\frac{6p-2}{7}=\frac{5p+7}{8}$

7. $\frac{a-3}{8}=\frac{3}{4}$

Algebra I - Unit 1: Topic 3 – Solving Proportions

8. Triangle *ABC* is similar to Triangle *DEF*. What is the value of *x*?



9. Marlene can walk $2\frac{1}{2}$ miles in 40 minutes. Determine how far she can walk in one hour.

B. Marlene increases her rate to 3 miles in 40 minutes. At this current rate, how far will she walk in one hour?

10. Vince is making cookies for his Single Survival class. The recipe he is using requires 1 cup of milk for 8 servings. If he wants to make enough cookies for 28 servings, how much milk will Vince need?

11. Josh is 1.8 meters tall. On a sunny day, Lenny measured Josh's shadow (3.5 meters) and the shadow of their house at the same time.

A. Draw a picture to represent the situation.

B. If the length of the house's shadow is 5 times the length of Josh's shadow, how long is the house's shadow?

C. What is the height of the house?

grades, etc.

Signed progress report (passing OR failing) is worth a bonus HW grade. Due Friday.

2nd - 58 4th - 65

3rd - 61 5th - 67

Test Corrections due Wednesday 9/24 5PM.

No lunches, AM/PM only on the following days

~~Monday~~	~~Tuesday~~	~~Wednesday~~	~~Thursday~~	~~Friday~~
NONE	AM	AM/PM	NONE	AM
NONE	AM	AM/PM		

pages

Notebook Score

$$\frac{\text{SCORE}}{16} = \frac{x}{100}$$

ex. $\frac{13}{16} = \frac{x}{100}$

$$\frac{1300}{16} = x$$

81%

Attachments

actone.mov

actthree.mov