

# Algebra

## November 14-18, 2011

- Monday, November 14, 2011
- SW solve equations with grouping symbols
- SW complete review quiz upon entering the classroom
- CW review notes students took on how to solve equations with grouping symbols and work through examples together in class.
- SW complete class work, working with a partner
- SW begin homework if time permits

- Grouping Symbols
  - > Steps: 1) Use distributive property to remove grouping sym.
  - 2) Combine like terms
  - 3) Add/Subt to get variables on one side
  - 4) Undo Add/Subt
  - 5) Now Undo Mult/Div

Solve each equation.

$$1. \quad 7 = 3(x+1) - 2 \quad \begin{array}{l} 7 = 3x + 1 \\ -1 \quad -1 \\ \hline 6 = 3x \\ \frac{6}{3} = \frac{3x}{3} \quad x = 2 \end{array}$$

$$2. \quad \begin{array}{l} -2(6+p) = 8 \\ -12 - 2p = 8 \\ +12 \quad +12 \\ \hline -2p = 20 \\ \frac{-2p}{-2} = \frac{20}{-2} \\ p = -10 \end{array}$$

$$3. \quad \begin{array}{l} 3(1-4k) = \frac{1}{2}(-24k+6) \\ 3-12k = -12k+3 \\ +12k \quad +12k \\ \hline 3 = 3 \end{array} \quad \text{Identity}$$

$$4. \quad \begin{array}{l} 4(t+5) + 6(2t-3) = 12 \\ 4t+20+12t-18 = 12 \\ -2+16t = 12 \\ -2 \quad -2 \\ \hline 16t = 14 \\ \frac{16t}{16} = \frac{14}{16} = t = \frac{14}{16} = \frac{7}{8} \end{array}$$

$$5. \quad \begin{array}{l} 5(h+6) - 6 = 3(5h-2) \\ 5h+30-6 = 15h-6 \\ -24 = 10h-6 \\ +6 \quad +6 \\ \hline 30 = 10h \\ \frac{30}{10} = \frac{10h}{10} \quad h = 3 \end{array}$$

- Class work: Page 178; 1, 4-10 all
- Homework: Page 178-179; 11-32 every third
- Read and take notes on pages 188-191

- Tuesday, November 15, 2011
- SW solve proportions
- SW complete review quiz upon entering the classroom
- CW review notes students took on solving proportions and work through examples together in class.
- SW complete class work, working with a partner
- SW begin homework if time permits

- Property of Proportions:

Cross products are equal

$$\frac{a}{b} \times \frac{c}{d} \quad a \cdot d = b \cdot c$$

Solve each proportion.

$$1. \frac{3}{a} = \frac{18}{24}$$

$$3 \cdot 24 = 18 \cdot a$$

$$72 = 18a$$

$$\frac{72}{18} = \frac{18a}{18}$$

$$a = 4$$

$$2. \frac{r}{100} = \frac{7}{8}$$

$$r \cdot 8 = 100 \cdot 7$$

$$8r = 700$$

$$\frac{8r}{8} = \frac{700}{8}$$

$$r = 87.5$$

$$3. \frac{5}{c} = \frac{13}{c+8}$$

$$5 \cdot (c+8) = c \cdot 13$$

$$5c + 40 = 13c$$

$$-8c = -40$$

$$\frac{40}{8} = \frac{8c}{8}$$

$$c = 5$$

- Solving Proportions with measurement.

You need to convert the measurement.

Solve each proportion.

1. 96 centimeters to meters.  $100 \text{ cm} = 1 \text{ m}$

$$\frac{96 \text{ cm}}{x} = \frac{100 \text{ cm}}{1}$$

$$\frac{96}{100} = \frac{100x}{100}$$

$$0.96 = x$$

$$0.96 \text{ m} = x$$

2. 2 gallons to quarts.

$$\frac{1 \text{ gal}}{4 \text{ qt}}$$

$$\frac{2}{d} \times \frac{1}{4}$$

$$d = 8 \text{ quarts}$$

3. 15 pints to quarts.  $2 \text{ pints} = 1 \text{ quart}$

$$\frac{15}{k} = \frac{2}{1}$$

$$\frac{2k}{2} = \frac{15}{2}$$

$$k = 7.5 \text{ quarts}$$

4. 4750 millimeters to meters.  $1000 \text{ mm} = 1 \text{ m}$

$$\frac{4750}{v} = \frac{1000}{1}$$

$$\frac{4750}{1000} = \frac{1000v}{1000}$$

$$v = 4.75 \text{ meters}$$

- Unit Rate:

How much 1 of something is - Denom. = 1

1. A trucker drove 210 miles in 5 hours. At this rate, how far will she travel in 8 hours?

$$210 \div 5 = 42 \text{ mph}$$

$$\frac{42}{1} = \frac{m}{8}$$

$$m = 336 \text{ miles}$$

2. The density of copper is 8.96 grams per cubic centimeter. Suppose you have a piece of copper whose volume is 25 cubic centimeters. How many grams of copper do you have?

$$\frac{8.96}{1} = \frac{g}{25}$$

$$g = 224 \text{ grams}$$

- Class work: Page 191-192; 1, 3-13 odd, 14, 15

- Homework: Page 192-193; 17-35 every third, 40-52 even

- Read and take notes on pages 194-195

- Wednesday, November 16, 2011

- SW solve problems involving scale drawings and models

- SW complete review quiz upon entering the classroom

- CW review notes students took on scale drawings and models and work through examples together in class.

- SW complete class work, working with a partner

- SW begin homework if time permits

- Scale drawing/Scale model:
  - Used to represent something that is too small or too large to use the actual item.
  - Architecture / Maps / Building / Science
- Scale:
  - Ratio of length of model compared to actual item.
  - When finding scale:  $1 \text{ foot} = 3 \text{ feet}$     1:3
  - Set up scale the numerator is 1.

1. The scale on a map of Texas is  $1 \text{ inch} = 50 \text{ miles}$ . Find the actual distance between San Antonio and Houston, if the distance between them on the map is  $3\frac{3}{4}$  inches.

$$\frac{1 \text{ in}}{50 \text{ m}} \times \frac{3.75}{1} \quad 1 \text{ in} = 187.5 \text{ miles}$$

2. The scale on a map of the upper Midwest is 1 inch = 15 miles. Find the distance between Chicago and Milwaukee on the map if the distance between the cities is 90 miles.

$$\frac{1 \text{ in}}{15 \text{ m}} \times \frac{90}{15} = \frac{15 \text{ in}}{15} \quad 1 \text{ in} = 6 \text{ inches}$$

3. A railroad car is 36 feet long and a scale model of the railroad car is 1.5 feet long. What is the scale for the model?

$$\frac{1}{x} \times \frac{1.5}{36} \text{ model} \quad \frac{1.5x = 36}{1.5 \quad 1.5} \quad x = 24 \text{ feet}$$

1 foot = 24 feet    1:24

4. In a photograph in a science textbook, the length of a ladybug is 2.5 centimeters. The scale of the photograph is 1 centimeter = 0.2 centimeter. What is the actual length of the ladybug?

$$\frac{1}{0.2} \times \frac{2.5}{x} \quad 1x = 0.5 \text{ cm} \quad \frac{2.5}{0.2} = 50$$

5. The distance between 2 cities is 180 miles. On a map, this distance is 5 inches. Find the scale used for drawing the map.

$$\frac{1 \text{ in}}{c} \times \frac{5 \text{ in}}{180} \quad \frac{5c = 180}{5 \quad 5} \quad c = 36 \text{ miles}$$

1 inch = 36 miles    1:36

- Class work: Page 196; 1, 3-5
- Homework: Page 196-197; 6-18 even

- Thursday, November 17, 2011
- SW review key concepts on grouping symbols, solving proportions, and scale drawings and models
- SW complete review quiz upon entering the classroom
- CW review key concepts from this weeks notes
- SW complete class work, working with a partner
- SW begin homework if time permits

- Grouping Symbols

- Use distributive property to remove parentheses
- Combine Like Terms
- Add/Subt to get all variables on one side
- Undo Add/Subt
- Undo Mult/Div.

$$-4(m-2) = 6m \quad -4(m) + 4(-2) \quad 3x - 2(x+3) = 6$$

$$-4m + 8 = 6m \quad 3x - 2x - 6 = 6$$

$$+4m \quad +4m \quad x - 6 = 6$$


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$$\frac{8}{10} = \frac{10m}{10} \quad \frac{x-6}{+6} = \frac{6}{+6}$$

$$m = \frac{8}{10} = 8 \text{ or } \frac{4}{5} \quad x = 12$$

- Solving Proportions

Simple Proportion: One where you're given all info to & just cross mult.

$$\frac{3}{4} = \frac{x}{4} \quad 4x = 12 \quad x = 3$$

Measurements: Conversions

$\frac{12}{1} \text{ in} = 1 \text{ ft}$ ,  $\frac{1000}{1} \text{ mm} = 1 \text{ m}$ ,  $\frac{10}{1} \text{ mm} = 1 \text{ cm}$   
 $\frac{3}{1} \text{ ft} = 1 \text{ yd}$ ,  $\frac{1760}{1} \text{ yds} = 1 \text{ mile}$ ,  $\frac{16}{1} \text{ oz} = 1 \text{ pound}$

Unit Rate: the denominator equals 1.

If you drive 5 hrs & go 250 miles how far will you travel in  $7\frac{1}{2}$  hours.

$$\frac{1 \text{ hour}}{250} \div 5 = 50 \quad \frac{1 \text{ hr}}{50 \text{ m}} \times \frac{7.5}{n} \quad 1 \text{ hr} = 375 \text{ miles}$$

- Scale Drawings and Models

-Used when the actual item is too large or too small

$$\text{Scale} \left\{ \frac{\text{model}}{\text{actual}} = \frac{\text{model}}{\text{actual}} \right.$$

Solving Scale: your answer is written as a ratio (:) or using words

Find scale for a bridge that is 150 ft long & the model is 10 ft

$$\frac{1}{n} = \frac{10}{150} \quad \frac{150}{10} = \frac{10n}{10} \quad 1 \text{ ft} = 15 \text{ ft} \text{ or } 1:15$$

- Class work: Page 182; 50, 52, Page 231; 12, 14, 16, 18

- Homework: 700-701; L4-7; 2-14 even/L5-1; 2-17 every third/L5-2; 1-5 all
- Read and take notes on pages 198-201

- Friday, November 18, 2011

- SW review various items for CRT's
- SW complete vocabulary quiz upon entering the classroom
- SW complete odd numbered questions with a partner and class will review whole group
- SW complete even numbered problems for homework.