

1st 5

Solve. Simplify.

1) $\frac{x-3}{-3} = \frac{2x+5}{6}$ 2) $\frac{72}{18}$

3) Find the unit rate if a 16 ounce bottle of coke costs \$ 1.69

4) In 1985 the price of a gallon of regular gasoline was \$1.20. In 2010 the price is \$3.44/gal. What is the percent of change?

Ratio and Proportion Day 4

Solve. Simplify.

1) $\frac{x-3}{-3} = \frac{2x+5}{6}$ 2) $\frac{72}{18} = \frac{4}{1}$

$6x - 18 = -6x - 15$
 $+6x \quad +6x$
 $12x - 18 = -15$
 $+18 \quad +18$
 $12x = 3$
 $\frac{12x}{12} = \frac{3}{12}$
 $x = \frac{1}{4} = .25$

Ratio and Proportion Day 4

3) Find the unit rate if a 16 ounce bottle of coke costs \$ 1.69

$\frac{\$1.69}{16 \text{ oz}} = \frac{\$0.105625}{1 \text{ oz}}$

Ratio and Proportion Day 4

4) In 1985 the price of a gallon of regular gasoline was \$1.20. In 2010 the price is \$3.44/gal. What is the percent of change?

$\frac{3.44 - 1.20}{2.24} \text{ change}$ $\frac{2.24}{1.20} = \frac{x}{100}$

$\frac{1.2x}{1.2} = \frac{224}{1.2}$
 $x = 186.7\%$

Ratio and Proportion Day 4

Practice 4-4

1. 25% decrease 2. 150% increase 3. 50% decrease
 4. 200% increase 5. 6% decrease 6. 40% increase
 7. 63% decrease 8. 75% increase 9. 14% increase
 10. 31% increase 11. 150% increase 12. 20% decrease
 13. 50% increase 14. 10% decrease 15. 13% decrease
 16. 50% increase 17. 20% decrease 18. 11% decrease
 19. 22% increase 20. 18% increase 21. 30% increase
 22. 11% increase 23. 300% increase 24. 66% increase
 25. 310% increase 26. 13% decrease 27. 45% increase

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■ A DVD set sells for \$54.99. The sales tax rate is 9%. How much will the DVD set cost?

What is 9% of 54.99

$\frac{is}{of} = \frac{9\%}{100}$ $\frac{is}{54.99} = \frac{9}{100}$

orig. 54.99 $\frac{100x}{100} = \frac{494.91}{100}$
 change +4.95 $x = 4.9491$ change
 New \$59.94

Ratio and Proportion Day 4

- Shirt is on sale for 25% off of the original price of \$34.99. The sales tax rate is 9%. How much will the shirt cost?

What is 25% of 34.99
 $\frac{x}{34.99} = \frac{25}{100}$
 $100x = 974.75$
 $x = 9.7475$
 $\$9.75$

orig 34.99
 change -9.75
 new 26.24
 tax = 2.36
 Cost = 28.60

What is 9% of 26.24
 $\frac{x}{26.24} = \frac{9}{100}$
 $100x = 236.16$
 $x = 2.3616$

Ratio and Proportion Day 4

- James is earning \$ 7.50/hr. He is going to receive an 8% increase in salary. What is his new hourly rate?

What is 8% of 7.50
 $\frac{x}{7.50} = \frac{8}{100}$
 $100x = 60$
 $x = .60$

-orig 7.50
 change .60
 new \$ 8.10/hr

Ratio and Proportion Day 4

Proportions and Similar Figures

- Similar figures have the same shape but not necessarily the same size
- The symbol \sim means "is similar to"

$\angle s \cong$
 Sides are "in proportion"

Ratio and Proportion Day 4

- Finding the length of a side.
- In the figure below, $\triangle ABC \sim \triangle DEF$. Find DE.

$\frac{AB}{DE} = \frac{BC}{EF} = \frac{AC}{DF}$
 $\frac{12}{x} = \frac{18}{4} = \frac{?}{?}$
 $x = 2.7$
 DE = 2.7 in

Ratio and Proportion Day 4

- Finding the Length of a Side
- In the figure below, $\triangle FGH \sim \triangle KLM$. Find LM.

$\frac{FG}{KL} = \frac{GH}{LM} = \frac{FH}{KM}$
 $\frac{9}{3} = \frac{12}{y} = \frac{?}{?}$
 $y = 4$
 LM = 4m

Ratio and Proportion Day 4

Using similar triangles to find distances

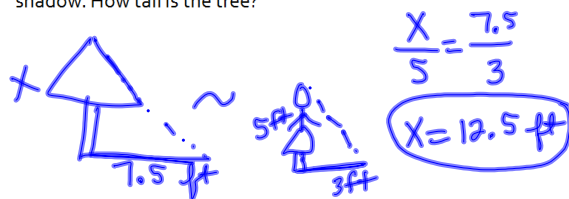
At a certain time of day a tree casts a shadow of 35 ft. At the same time, a 6 foot tall pole near the tree casts a shadow of 12 feet. How tall is the tree?

$\frac{x}{6} = \frac{35}{12}$
 $x = 17.5$
 X = 17.5 ft

Ratio and Proportion Day 4

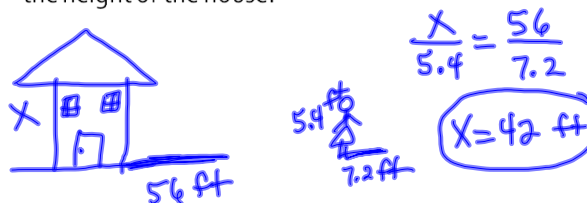
■ Applying Similarity

- A tree casts a shadow 7.5 ft long. A woman 5 ft tall casts a shadow 3 ft long. The triangle shown for the tree and its shadow is similar to the triangle shown for the woman and her shadow. How tall is the tree?



Ratio and Proportion Day 4

- A house casts a 56 ft shadow. A girl standing nearby casts a 7.2 ft shadow. Her height is 5.4 ft. What is the height of the house?



Ratio and Proportion Day 4

- A scale drawing is an enlarged or reduced drawing that is similar to an actual object or place.

- The ratio of a distance in the drawing to the corresponding actual distance is the scale of the drawing.

Ratio and Proportion Day 4

■ Finding distances on Maps

- The scale of the map is 1 inch: 10 miles. Approximately how far is it from Shreveport to Minden if the map distance is 29.8 inches.

$$\frac{1 \text{ in}}{10 \text{ mi}} = \frac{29.8 \text{ in}}{X \text{ mi}}$$

$$X = 298 \text{ mi}$$

Ratio and Proportion Day 4

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PW 4

- Workbook pg. 48 All

Ratio and Proportion Day 4