

8-1 Ratios and Rates (Page 392)Writing Ratios:

Stars to Smiley Facers

3 : 4

3 to 4

 $\frac{3}{4}$ Writing equivalent ratios:

1. Multiply both numbers by the same number
2. Reduce the fraction by dividing by the same number

Finding Unit price:

1. Divide the cost by the number of units in the pack
2. The lower number is the better deal

Ex # 1) Which one is the better deal? 2 liter bottle of soda for \$2.02 or a 3 liter bottle of soda for \$2.79

8-2 Proportions (Page 398)

Proportion: a proportion is an equation that shows two equivalent ratios.

$$\text{Ex \# 1) } \frac{2}{1} = \frac{4}{2} \quad \text{Ex \# 2) } \frac{4}{2} = \frac{8}{4} \quad \text{Ex \# 3) } \frac{2}{1} = \frac{6}{3}$$

Finding the missing number:

1. Cross multiply
2. Use the inverse operation to solve your multiplication problem by dividing
3. Isolate the variable

$$\text{Ex \#1) } \frac{3}{4} = \frac{X}{16} \quad \text{Ex \#2) } \frac{3}{8} = \frac{12}{X} \quad \text{Ex \# 3) } \frac{X}{5} = \frac{24}{30}$$

8-3 Proportions and Customary Measurement (Page 402)

Page 402 has a chart with the customary units that you are responsible for knowing

Using proportions to convert measurements:

1. Set up the proportion starting with what we know
2. Be sure to set up being consistent (feet on top of both ratios and inches on bottom or both ratios)
3. Cross multiply
4. Use the inverse operation to solve your multiplication problem by dividing

Ex # 1) The Washington Monument is 185 yards tall. How tall is the monument in feet?

$$\text{What we know} \quad \longrightarrow \quad \frac{1 \text{ yd}}{3 \text{ ft}} = \frac{185 \text{ yd}}{X} \quad \longleftarrow \quad \text{What we want to know}$$

Ex # 2) The world's largest ice cream sundae weighed about 55,000 pounds. How many tons did it weigh?

$$\frac{1 \text{ TON}}{2000 \text{ LB}} = \frac{X}{55,000 \text{ LB}}$$

8-4 Similar Figures (Page 405)

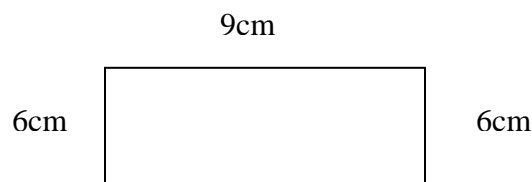
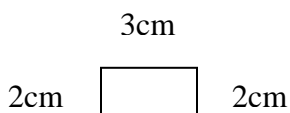
Similar Figures: Same shape different size that have corresponding shapes and sizes

Corresponding sides: have side lengths that are proportional

Corresponding angles: are congruent or equal

How to find missing angles: they are the same for each shape. Be sure that they are in the same position

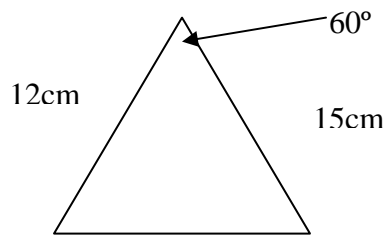
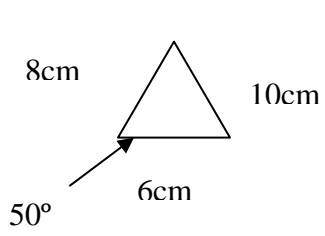
How to find missing side lengths: Set up a proportion starting with what you know being sure to be consistent of what goes on the top and bottom for each ratio.



$$\frac{2 \text{ cm}}{6 \text{ cm}} = \frac{3 \text{ cm}}{X \text{ cm}}$$

3cm

X cm



$$\frac{8cm}{12cm} = \frac{6cm}{Xcm}$$

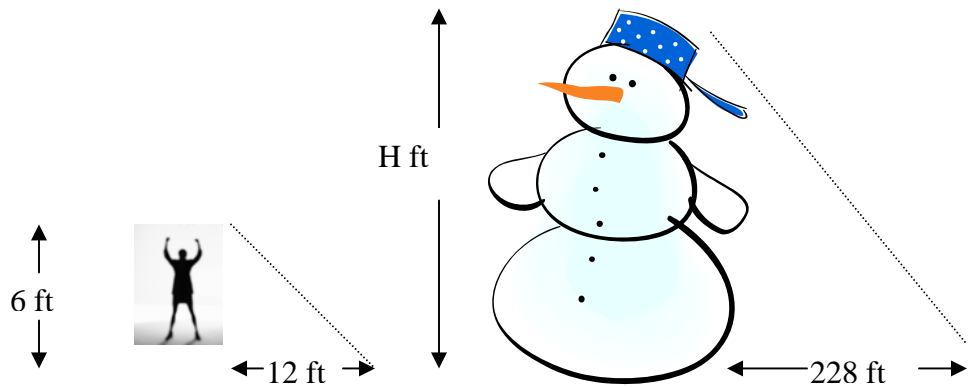
Find X =

Find the missing angles

Date _____

8-5 Indirect Measurement (Page 409)

$$\frac{\text{height of small}}{\text{height of big}} = \frac{\text{shadow of small}}{\text{shadow of big}}$$



8-7 Percents (Page 418)Writing percents as a fraction into simplest form:

1. Write the percent as a fraction with a denominator of 100
2. Reduce the fraction to lowest terms
 - a. Divide the numerator and denominator by the GCF to get into lowest terms
 - b. Divide the numerator and denominator by the same number until it is in lowest terms
 - i. Lowest terms if numerator is 1
 - ii. Lowest terms if numbers are neighbors
 - iii. Lowest terms if the GCF of numerator and denominator is 1

$$\text{Ex \# 1) } 40\% \quad \frac{40}{100} \quad \div \frac{20}{20} \quad = \frac{2}{5}$$

$$\text{Ex \# 2) } 65\% \quad \frac{65}{100} \quad \div \frac{5}{5} \quad = \frac{13}{20}$$

Writing percents as a decimal:

1. Move the decimal two places to the left
2. If no decimal is present, start all the way to the right and move 2 places to left
3. If a decimal is present, move two places from the decimal

$$\text{Ex \# 3) } 24 \%$$

$$\text{Ex \# 4) } 75\%$$

8-8 Percents, Decimals and Fractions (Page 422)Writing decimals as a percent:

1. Move the decimal over two places to the right
2. Your answer could still have a decimal in it

$$\text{Ex \# 5) } 0.3 = 30\%$$

$$\text{Ex \# 6) } 0.43$$

$$\text{Ex \# 7) } 0.7431$$

Write each fraction as a percent:

1. Set up to find the missing number
2. Put the original fraction and then the second fraction is X over 100
3. Cross multiply to find the missing number

$$\text{Ex \# 8) } \frac{4}{5} \quad \frac{4}{5} = \frac{X}{100}$$

$$\text{Ex \# 9) } \frac{3}{8} \quad \frac{3}{8} = \frac{X}{100}$$

$$\frac{5X = 400}{5 \quad 5}$$

$$X =$$

$$\frac{8X = 300}{8 \quad 8}$$

$$X =$$

8-9 Percent Problems (Page 426)Finding the percent of a number:

1. Multiply the number by the percent as decimal
2. Be sure to make the percent a decimal by moving the decimal over two places to the left
3. Don't forget the decimal in your answer if necessary.

Ex # 10) Find 20% of 150

$$150 \cdot 0.20$$

Ex # 11) Find 5 % of 90

$$90 \cdot 0.05$$

Percent word problems:

1. Use the proportion is over the of
2. Cross multiply and find the value of the variable

Ex # 12) The frozen yogurt stand sells 420 cups per day. 45% of the cups that are sold are sold to teenagers. How many cups are sold to teenagers?

$$\frac{\%}{100} = \frac{is}{of} \quad \frac{45}{100} = \frac{X}{420} \quad = 100 X = 18,900$$

Ex # 13) Heather is downloading a file from the internet. So far she has downloaded 75% of the file. If 30 minutes have passed since she started, how long will it take her to download the rest of the file?

$$\frac{\%}{100} = \frac{is}{of} \quad \frac{75}{100} = \frac{30}{X}$$

8-10 Using Percents (Page 432)

Discount = an amount subtracted from the regular price

Discount = price multiplied by the discount rate as a decimal

Total Cost = price – discount (also called sale price)

Tips = amount added to a bill for service

Tip = bill multiplied by tip rate as a decimal

Total Cost = Bill + tip

Sales Tax = amount added to the price

Sales Tax = price multiplied by sales tax rate as a decimal

Total Cost = price plus sales tax

Ex # 14) CD price is \$14.99 with a 10% discount

$$\$14.99 \cdot 0.10 = \text{Discount}$$

Discount =

Sales Price =

Ex # 15) Lunch bill is \$13.95 with a 15% tip

$$\$13.95 \cdot 0.15 = \text{Tip}$$

Tip =

Total cost =

Ex # 16) Buying a scooter for \$79.65 with a sales tax of 6%

$$\$79.65 \cdot 0.06 = \text{Tax}$$

Tax =

Total cost =