

**OBJECTIVE 1:** Solving Percent Equations

Normal stats are given in percent: basketball player's free throw percentage, current interest rates, stock market trends, & nutrition labels are just some of the examples of how we use percent every day.

$$\# = \% (\text{Original } \#)$$

Steps for Problem Solving

- 1) UNDERSTAND the problem
    - Read and reread the problem
    - Choose a variable for the unknown
    - Draw a picture if one is not provided
    - Propose a solution and check that answer in the original problem
  - 2) TRANSLATE the problem into an equation
  - 3) SOLVE the equation
  - 4) INTERPRET the solution
    - Check the answer in terms of the problem
- Use appropriate units

**TASK 1:** Find the percent.

a) The number 63 is what percent of 72?

$$63 = x(72)$$

$$x = \frac{63}{72} = 0.875$$

$$87.5\%$$

b) The number 35 is what percent of 56?

$$35 = x(56)$$

$$x = \frac{35}{56} \approx 0.625$$

$$62.5\%$$

**TASK 2:** Finding the number

a) The number 198 is 55% of what number?

$$198 = 0.55(x)$$

$$x = \frac{198}{0.55} = 360$$

$$55\%$$

$$0.55$$

b) The number 120 is 15% of what number?

$$120 = 0.15(x)$$

$$x = \frac{120}{0.15} = 800$$

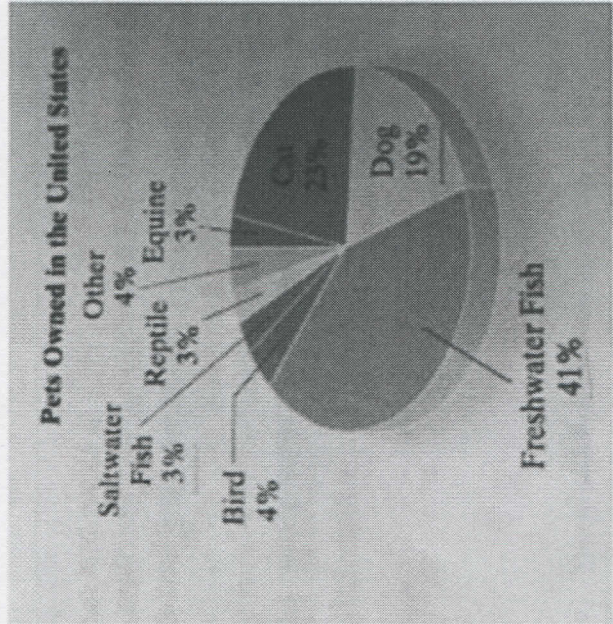
$$15\%$$

$$0.15$$



NOT  $\Rightarrow 100\% - x\%$

OR  $\Rightarrow$  add %s



### TASK 3: Circle Graph

The circle Graph below shows the breakdown of total pets owned in the United States. Use the graph to answer the questions.

- a. What percent of pets owned in the US are cats OR dogs?

$$23\% + 19\% = 42\%$$

- b. What percent of pets owned in the US are NOT birds?

$$100 - 4 = 96\%$$

- c. In 2014, 396.12 million pets were owned in the US. How many of these were cats? (Round to the nearest tenth of a million.)

$$23\% (396.12)$$

$$0.23 (396.12) = 91.1 \text{ million cats}$$

### OBJECTIVE 2: Solving Discount & Mark-up Problems

Mark-up = percent (original price)

Discount = percent (original price)

New Price = original price + mark-up

New Price = original price - discount

### TASK 4:

- a) Cell Phones Unlimited recently reduced the price of a \$140 phone by 20%. What is the discount and the new price?

$$x = 20\% (140) = 0.20 (140) = 28$$

$$140 - 28 = 112$$

discount: \$28 new price: \$112

- b) A used treadmill, originally purchased by Suppz Gym for \$480, was sold at a closeout sale at a discount of 85% of the original price. What were the discount amount and the new price?

$$x = 85\% (480) = 0.85 (480) = 408$$

$$480 - 408 = 72$$

discount: \$408  
new price: \$72

Still need help with: