

# Wednesday, September 19, 2012

## TISK Problems

- 1) Simplify:  $(6y - 8x) - (2x - 9y)$
- 2) Write & Solve an Equation:  
James has four fewer than three times the number of candy bars that David has. If James has two candy bars, how many does David have?

We will have 3 Mental Math Questions today.

**HOMEWORK: p. 422 #21-30**

# Homework Check

17) 23% decrease

19) 30% decrease

21) 17% decrease

23) \$600

25) 200

27) 50

29) The price decreased by about 40%.

# §8-5 Estimating with Percents

- Estimation is a good way to determine whether or not your answer is **REASONABLE**.
- Why is it easy to find 10% of any number?
  - $10\% = \frac{10}{100} = \frac{1}{10}$
  - Finding 10% is the same as dividing by 10
  - When you divide by 10, you just move the decimal one place to the left.
- If it's easy to find 10%, how hard is it to find 5%?
  - Find 10% then take half!
- We use bases of 10% or 5% to help us to estimate percents to check to see if our answers are reasonable.

# Example

- Use estimation to give an approximate answer.
  - Find 8% of 32
    - Start by rounding the percent to the nearest multiple of 5 or 10.
      - $8\% \approx 10\%$
    - Now find the percent:
      - 10% of 32 is 3.2
      - Therefore, 8% of 32 is approximately 3.2

# Example

- Estimate.
  - 26% of 48
    - $26\% \approx 25\% = \frac{25}{100} = \frac{1}{4}$
    - $\frac{1}{4} \cdot 48 = 12$
    - Therefore, 26% of 48 is approximately 12.
  - 14% of 20
    - $14\% \approx 15\% = 10\% + 5\%$
    - 10% of 20 is 2
      - Therefore, 5% of 20 is 1
    - Thus, 14% of 20 is approximately  $2 + 1 = 3$ .

# Example

- The diameter of the Moon is about 2160 miles. If the diameter of the Moon is about 27% of the diameter of the Earth, what is the approximate diameter of Earth?

These words all imply that the answer we are looking for does not need to be exact.

In other words, the question is telling us to use rounding and estimation!

# Example

- The diameter of the Moon is about 2160 miles. If the diameter of the Moon is about 27% of the diameter of the Earth, what is the approximate diameter of Earth?

1. Change to a percent question.

Two thousand one hundred sixty is 27% of what number?

2. Write a percent equation.

$$2160 = 27\% \cdot e$$

3. Estimate.

$$2160 \approx 30\%e$$

$$720 \approx 10\%e$$

$$27\% \approx 30\%$$

$$2160 \div 3 = 720 \quad 7200 \approx e$$

- Earth is approximately 7,200 miles in diameter. •

# Check Point

- Estimate.
  - 21% of 66
  - 36% of 120
- A normal tip is 15%-20%. What would be a normal tip on a \$24.89 bill?



# Discuss

- How could you find 35% of a number if you knew what 10% of that number was?

# Homework

- p. 422 #21-30