# 6.5 Percent Increase or Decrease

## Learning Targets

- Find a Percent Increase or Decrease
- Find a NEW amount after an Increase or Decrease
- Find a Percent of Error

# 6.5 Percent Increase or Decrease

Learning Target #1

$$\frac{\text{New Amount} - \text{Original Amount}}{\text{Original Amount}}$$

$$\frac{\text{Change}}{\text{Original Amount}}$$

**Percent Increase or Decrease**

$$\frac{\text{Change}}{\text{Original Amount}}$$

If the percent change is Positive = INCREASE

If the percent change is Negative = DECREASE

**The percent of change is not written as a + or - amount**

**A. 10 students to 25 students**

Increase

$$\frac{\text{Final - Original}}{\text{Original Amount}}$$

$$\frac{15}{10} = 1.5 \qquad 150\%$$

**B. 9 inches to 3 inches**

Decrease

$$\frac{\text{Final - Original}}{\text{Original Amount}}$$

$$\frac{6}{9} = 0.66666 \qquad 66\frac{2}{3}\%$$

# Percent Increase

**The table shows the numbers of hours you spent online last weekend. What is the percent of change in your online time from Saturday to Sunday?**

| Day | Hours Online |
|---|---|
| Saturday | 2 |
| Sunday | 4.5 |

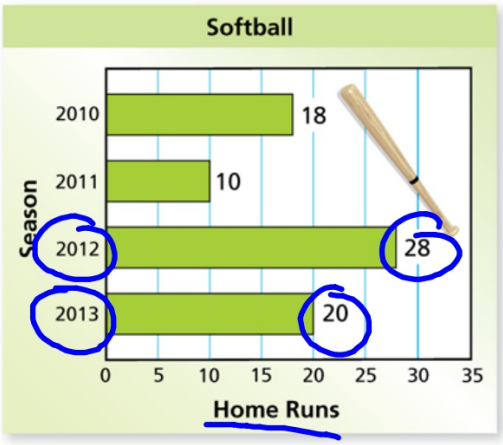
increase or decrease?

Increase

$\frac{2.5}{2} = 1.25$ 125%

# Percent Decrease

**The bar graph shows a softball player's home run totals. What was the percent of change from 2012 to 2013?**




increase or decrease?

decrease

$\frac{8}{28} = 0.285714286$

29%

whole %

Tenth % 28.6%

Hundredth % 28.57%

# Find a NEW Amount after a percent increase or decrease

Learning Target #2

**Two Steps:**

- Multiply to find the amount of change
- Add or Subtract to find the new amount

# Finding an increase

84 days increased by 25%

Step 1: Find 25% of 84

$0.25 * 84 = 21$

Step 2: $84 + 21 = 105$

# Finding a Decrease

$140.00 decreased by 32%

Step 1: $0.32(140) = 44.8$

$44.80

Step 2: $140.00 - 44.80 = 95.20$

Sale Price $95.20

# Example: Percent Error

Learning Target #3

too much = over estimating
too little = under estimating

$$\frac{\text{Estimated - Actual Amount}}{\text{Actual Amount}}$$

$$\frac{\text{Amount of error}}{\text{Actual Amount}}$$

Percent Of Error

$$\frac{\text{Amount of error}}{\text{Actual Amount}}$$

If the percent of error is Positive = Overestimated

IF the percent of error is Negative = Underestimated

**The percent error is not written as a + or - amount**

# Example: Percent Error

**You estimate that the length of your classroom is 16 feet. The actual length is 21 feet. Find the percent error.**

underestimated

$\frac{5}{21} = 0.238095$

Whole %

24%

# Homework

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#1-7, 8-18 even

19, 24, 26, 27