

Name _____

Date _____ (R)

Mr. Tallman

Do Now**Use the percent equation to answer the following questions.**

1) Jennifer made a fruit juice using red and green grapes. Thirty percent of the grapes are green. If she used a total of 60 grapes, how many green grapes did she use?

Part: X
Whole: 60
Percent: 30

$$\text{Part} = \text{whole} (\%)$$

$$X = 60(.3)$$

$$X = 18$$

2) A serving of ice cream contains 500 calories. 120 of those calories come from fat. What percent of the 500 calories come from fat?

Part: 120
Whole: 500
Percent: X

$$\frac{120}{500} = \frac{500(X)}{500}$$

$$X = 0.24$$

$$\rightarrow 24\%$$

Lesson #35 - Percent of Change and Percent Error

The percent equation can be used to measure the percent of change of different measurements.

Formula: $\text{change} = \text{original}(\%)$

Example 1) Fill in the table based on each situation.

	Original	New	Change	Percent	Equation
You're 12 years old and will be 18 when you go to college.	12	18	6	X	$6 = 12X$
A shirt was \$15 and is now \$20	15	20	5	X	$5 = 15X$
The temperature was 17° in the morning and 12° in the evening.	17	12	5	X	$5 = 17X$

Example 2) Jordan went to buy a sketch book for art that he saw for \$30. When he got to the store, it was marked \$50. What is the percent of change?

Original: 30 Change = orig(x)
 New: 50 $20 = \frac{30}{20}x$
 Change: 20 $\frac{20}{20} = \frac{30}{20}$
 $x = 0.6666 \rightarrow 66.7\% \text{ increase}$

Example 3) A skateboard is worth \$400. James bought it for \$100. What is the percent of change?

Original: 400 Change = orig(x)
 New: 100 $300 = \frac{400}{400}x$
 Change: 300 $\frac{300}{400} = \frac{400}{400}$
 $x = 0.75 \rightarrow 75\% \text{ decrease}$

Now, You Try!

4) A car is worth \$27,000. Tom bought it for \$25,000. What is the percent change?

Original: 27,000 Change = orig(x)
 New: 25,000 $2000 = \frac{27000}{27000}x$
 Change: 2,000 $\frac{2000}{27000} = \frac{27000}{27000}$
 $x = 0.074 \rightarrow 7\% \text{ decrease}$

5) Kate bought a necklace for \$3,000. It is worth \$8,000. What is the percent change?

Original: 8,000 Change = orig(x)
 New: 3,000 $5000 = \frac{8000}{8000}x$
 Change: 5,000 $\frac{5000}{8000} = \frac{8000}{8000}$
 $x = 0.625 \rightarrow 62.5\%$

Percent Error - Describes the amount of error there was when measuring something.

Example 6) Alan needs to purchase a bed sheet. He measures his bed to be 7 feet long. His bed is actually 6.5 feet long. What is his percent of error? Round to the nearest whole percent.

Original (Actual measurement): 6.5 Change = orig(x)
 New (Wrong measurement): 7 $0.5 = \frac{6.5}{6.5}x$
 Change: 0.5 $\frac{0.5}{6.5} = \frac{6.5}{6.5}$
 $x = 0.08 \rightarrow 8\%$

Example 7) Suppose you guess there are 300 gumballs in a jar, but there are actually 400. What is the percent of error?

Original (Actual measurement): 400

New (Wrong measurement): 300

Change: 100

Change = orig (%)

$$\frac{100}{400} = \frac{\cancel{400}x}{\cancel{400}}$$

$$x = 0.25 \rightarrow \textcircled{25\%}$$

Now, You Try!

8) Michael wants to practice free-throws. He estimates the distance from the free-throw line to the hoop and marks it with chalk. Michael's estimate was 13.5 feet. The actual distance should be 15 feet. Find the percent of error

Original (Actual measurement): 15

New (Wrong measurement): 13.5

Change: 1.5

Change = orig (%)

$$\frac{1.5}{15} = \frac{\cancel{15}x}{\cancel{15}}$$

$$x = 0.10 \rightarrow \textcircled{10\%}$$

9) In an experiment, a chemist estimated the amount of liquid in a beaker to be 52 mL. The actual amount of liquid in the beaker was 50 mL. What was the percent of error?

Original (Actual measurement): 50

New (Wrong measurement): 52

Change: 2

Change = orig (%)

$$\frac{2}{50} = \frac{\cancel{50}x}{\cancel{50}}$$

$$x = 0.04 \rightarrow \textcircled{4\%}$$