

# Percent of Change

## Lesson 2-5

A **percent of change** is a ratio that compares the change in quantity to the *original* amount. If the original quantity is increased, it is a **percent of increase**. If the original quantity is decreased, it is a **percent of decrease**.

$$\% \text{ of Change} = \frac{\text{New-Original}}{\text{Original}} \times 100$$

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$$\frac{\text{New-Original}}{\text{Original}} = \frac{\% \text{ of change}}{100}$$

Item	Year	Cost	Rate	Today's Cost
Gallon of Milk	1990	\$2.78		\$3.75
1 Dozen Eggs	1990	\$1.00		\$2.11
1 Gallon of Gas	1990	\$1.16		\$2.15

Example 1)

a. What is the Percent of Change for a Gallon of Milk from 1990 to now?

Steps in Words	Steps in Math
-Find the <b>change (the difference)</b> between the <i>new value</i> and the <i>original value</i> .	
- Plug the <b>change</b> and <i>original value</i> into the formula. - Label percent of change as <i>x</i> .	
- <u>Divide the change (new - original)</u> by the <i>original</i>  -Multiply by <b>100</b>	
-Is this a <u>percent of increase</u> or a <u>percent of decrease</u> ?	

b. What is the Percent of Change for 1 Dozen Eggs from 1990 to now?

c. What is the Percent of Change for 1 Gallon of Gas from 1990 to now?

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- Find each percent change to the nearest percent. State if it is an increase or a decrease.

1. From 45 ft to 92 ft

2. From 83 hours to 76 hours

3. From 139 minutes to 385 minutes

4. Original: 58 Homes  
New: 152 Homes

5. Original: 231.2 mph  
New: 236.4 mph

6. Original: \$53  
New: \$75

7. The World Future Society predicts that by the year 2020, airplanes will be able to carry 1400 passengers. Today's biggest jets can carry 600 passengers. What will be the percent of increase of airplane passengers?

# Percent Error

# Lesson 2-5 (Part 2)

The **Percent Error** shows the difference between *approximate* and *exact* values.

$$\text{Percent Error} = \frac{|\text{Approximate Value} - \text{Exact Value}|}{|\text{Exact Value}|} \times 100 = \frac{|\text{Approximate Value} - \text{Exact Value}|}{|\text{Exact Value}|} = \frac{\% \text{ Error}}{100}$$

**Directions:** Find the percentage error of each estimated person's age to the **nearest tenth**.

Person	Estimated (Approximate) Age	Actual (Exact) Age
1) Katy Perry		
2) Eminem		
3) Hello Kitty		

Person	Estimated (Approximate) Age	Actual (Exact) Age
4) Mickey Mouse		
		
5) Pitbull		
		
6) Kendrick Lamar		
		
7) Kendall Jenner		
		