------------------------------------------------------------------------------------------------------------

*I can **calculate percent change**.*

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**Percent Increase:** when the value is ___more___ than 100% of the original value          Example:  50 to 75  (50% increase)

**Percent Decrease:** when the value is ___less___ than 100% of the original value          Example: 50 to 25  (50% decrease)

<div style="border:1px solid #000;">

**Percent Change**

$$\frac{\textbf{Amount of Change}}{\textbf{Original Amount}}$$

</div>

**Calculate Percent Change:**

| Original value: 25 → New value: 30 | Original value: -18 → New value: -45 |
|---|---|
| $\frac{Amount\ of\ Change}{Original\ Amount}$  so ...  $\frac{5}{25}$ | $\frac{Amount\ of\ Change}{Original\ Amount}$  so ...  $\frac{27}{-18}$ |
| Percent Change: __20__ % <u>increase</u> / decrease | Percent Change: __150__ % increase / <u>decrease</u> |
| $\frac{5}{25} = 0.2$ | $\frac{27}{-18} = -1.5$   ABS VALUE |
| Original value: 55 → New value: 47 | Original value: 160 → New value: 200 |
| $\frac{Amount\ of\ Change}{Original\ Amount}$  so ...  $\frac{8}{\ }$ | $\frac{Amount\ of\ Change}{Original\ Amount}$  so ...  $\frac{40}{160}$ |
| Percent Change: __14.5__ % increase / <u>decrease</u> | Percent Change: __25__ % <u>increase</u> / decrease |
| $\frac{8}{55} = 0.145$ | $\frac{40}{160} = .25$ |

Janie starts playing sports and gets in shape.  She goes from 125 pounds to 110 pounds.  What is her percent change in weight?

$$\frac{15}{125} = 0.12 = 12\%$$

decrease

**You Try:** Growing up, you lived in a tiny country village.  When you left college, the population was 840.  You recently heard the population was 882.  What is the percent change?

$$\frac{42}{840} = 0.05 = 5\%$$

increase

One Week 24 people in Waynesville got speeding tickets.  The next week only 16 people got speeding tickets.  What is the percent change?

$$\frac{8}{24} = 0.333 = 33.3\%$$

decrease

**You Try:** Last year, only 8 athletes played on the girls tennis team.  This year 10 people played.  What is the percent change?

$$\frac{2}{8} = 0.25 = 25\%$$

increase

**Finding a New Value:**

The Waynesville High School library has 500 books. Next year, they would like to increase the number of books they have by 52%. If they reach their goal, how many books would they have next year?

$$1.52 \cdot 500 = 760 \text{ books}$$

**You Try:** The Waynesville High School band has 45 members. Next year, they would like to increase their membership by 20%. If they reach their goal, how many members would they have next year?

$$1.2 \cdot 45 = 54 \text{ members}$$

The Dayton Transportation Department recorded 200 crashes in October. Next month, they would like to decrease their crashes by 25%. If they reach their goal, how many crashes would they have next month?

$$0.75 \cdot 200 = 150 \text{ crashes}$$

**You Try:** The Dayton Fire Department recorded 120 fires in October. Next month, they would like to decrease the fires by 20%. If they reach their goal, how many fires would they have next month?

$$0.8 \cdot 120 = 96 \text{ fires}$$

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**You Try**     ***Wait for instructions before beginning these questions.***

**C**

1.) A jar contains 8 blue marbles, 9 red marbles, 12 green marbles, and 7 yellow marbles. What percentage of the marbles is NOT red?

|  |  |
|---|---|
| A) 27% | C) 75% |
| B) 25% | D) 9% |

**D**

2.) Which of the following values is/are NOT equivalent to the others?

|  |  |
|---|---|
| A) 4/5 | D) 0.08 |
| B) 80% | E) 80/100 |
| C) 12/15 | F) 0.8 |

**D**

3.) What is the greatest percent of change?

A) A tree grew from 6 feet to 12 feet     $\frac{6}{6}$

B) An aquarium that was originally priced at $80 is now $60     $\frac{20}{80}$

C) A person whose salary was $100 per week is now earning $120 per week     $\frac{20}{100}$

D) A baby who weighed 7 pounds at birth now weighs 16 pounds     $\frac{9}{7} = 1.29$