

Vocabulary	Formula
Percent of Change: a ratio (fraction) that compares how much a # has changed compared to the original amount. * $\text{CHANGE} = \text{NEW} - \text{original} $ (Positive answer)	$\frac{\text{CHANGE}}{\text{original}} = \frac{\%}{100}$
Percent of Increase: • when the original # has gotten <u>LARGER!</u>	use \uparrow to find what % it increased by
Percent of Decrease: • when the original # has gotten <u>smaller!</u>	use \uparrow to find what % it decreased by
Percent Error:	

Ex. 1: Find the percent of change in the cost of gasoline from 1970 to 2010. Round to the nearest whole percent if necessary.

① Identify **original** & **new** amounts

② Find the CHANGE: $\$2.95 - \$1.30 = \boxed{\$1.65}$

③ Set up proportion

④ Did the amount increase or decrease?

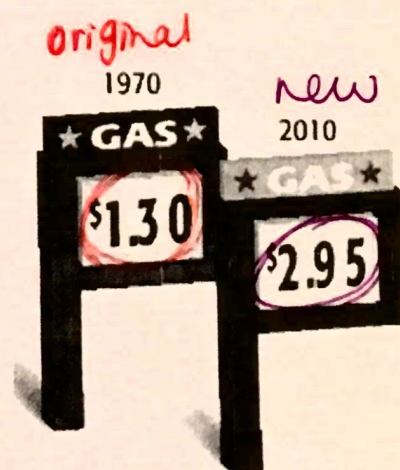
$$\frac{\text{CHANGE}}{\text{original}} = \frac{\%}{100}$$

$$\frac{1.65}{1.30} = \frac{x}{100}$$

$$1.30x = 165$$

$$x = 126.9$$

Answer: 127%
increase



Ex. 2: John bought a DVD recorder for \$280. Now, it is on sale for \$220. Find the percent of change in the price. Round to the nearest whole percent if necessary.

New

original

Questions to ask:

- what is the original price?
- Increase or Decrease?
- How do we find change?

CHANGE = New - original
 = 220 - 280 = -60 = 60 Just use the positive #.

$$\frac{\text{CHANGE}}{\text{original}} = \frac{\%}{100}$$

~~$$\frac{60}{280} = \frac{x}{100}$$~~

$$\frac{280x}{280} = \frac{6000}{280}$$

x = 21.4

21% Decrease

Ex. 3: Find the percent of change from 10 yards to 13 yards.

original

NEW!

CHANGE: increased by 3.

~~$$\frac{3}{10} = \frac{x}{100}$$~~

$$10x = 300$$

$$x = 30\%$$

increased by 30%

2nd way to solve:

$$\frac{\text{Change}}{\text{original}} = \frac{3}{10} = .3 \text{ then } \cdot \text{by } 100$$

or \curvearrowright
 $3 \curvearrowright = 30$ so 30%

Ex. 4: The price of a radio was \$20. It is on sale for \$15. What is the percent of change in the price of a radio?

original

New

CHANGE: decreased by 5

~~$$\frac{5}{20} = \frac{x}{100}$$~~

$$20x = 500$$

$$\frac{20}{20} \quad \frac{20}{20}$$

$$x = 25$$

Quick way: $\left(\frac{5}{20}\right) \cdot 100$
 $\curvearrowright \cdot 100 = \boxed{25\%}$

Find each percent of change. Round your answers to the nearest whole percent if necessary. State whether the percent of change is an increase or decrease. 3 parts!

Ex. 5: ^{original} 6 feet to ^{New} 20 feet

$$\text{CHANGE} = \text{NEW} - \text{original}$$

$$20 - 6 = \boxed{14}$$

* proportion or 2nd way!
You pick, but show work!

$$\frac{14}{20} = .7 \text{ then } \rightarrow \boxed{70\% \text{ increase}}$$

Ex. 7: 250 pounds to 195 pounds

$$195 - 250 = \boxed{55}$$

or $250 - 195 =$

$$\frac{55}{250} = .22$$

$\boxed{22\% \text{ decrease}}$

Do rest on their own & check?

Ex. 6: 120 days to 85 days

$$120 - 85 = 35 \text{ Just use } 35$$

$$\text{or } 85 - 120 = -35$$

$$\frac{35}{120} = .291666\dots$$

$\boxed{29\% \text{ decrease}}$

Ex. 8: Original: 1.4 New: 1.9

$$1.9 - 1.4 = .5$$

$$\frac{.5}{1.4} = .357\dots$$

$\boxed{36\% \text{ increase}}$