

Percent Increase and Decrease

$$\text{Percent Increase} = \frac{\text{new} - \text{original}}{\text{original}} \times 100\%$$

$$\text{Percent decrease} = \frac{\text{original} - \text{new}}{\text{original}} \times 100\%$$

Ex) A shirts price goes from \$30 to \$35. What is the percent increase?

$$\frac{35 - 30}{30} \times 100\% = \frac{5}{30} \times 100\% = \frac{1}{6} \times 100\%$$

$$= \frac{100}{6}\% = \frac{50}{3}\% = 16\frac{2}{3}\%$$

Ex) A shorts price goes from \$20 to \$15. What is the percent decrease?

$$\frac{20 - 15}{20} \times 100\% = \frac{5}{20} \times 100\%$$

$$= \frac{1}{4} \times 100\% = \frac{100}{4}\% = \boxed{25\%}$$

Increase or decrease a number by a percent:

1) find the percent of the number

2) Consider if increase or decrease

a) if increase, add the result to the original

b) if decrease, subtract the result from the original

Ex) Increase 250 by 20%

$$\frac{20}{100} \cdot 250 = \frac{500}{100} = 5$$

$$250 + 5 = \boxed{255}$$

Ex) Decrease 470 by 15%

$$\frac{15}{100} \cdot 470 = \frac{7050}{100} = \frac{705}{10} = 141$$

$$470 - \frac{141}{2} = \frac{940}{2} - \frac{141}{2} = \boxed{\frac{799}{2}}$$

$$\boxed{\frac{799}{2}} = 100\% = 100\% \times \frac{1}{1} =$$