

Objective 3: Solving Percent of Increase & Percent of Decrease Problems

Percent of increase or percent of decrease is a common way to describe how some measurement has increased or decreased.

$$\text{Increased} = \text{New cost} - \text{Old cost}$$

$$\text{Increase} = \% \text{ increase (New cost)}$$

$$\text{Decreased} = \text{Old cost} - \text{New cost}$$

$$\text{Decrease} = \% \text{ decrease (Old cost)}$$

TASK 1: Calculating the Percent Increase of Attending College

- a) The tuition and fees cost of attending a public four-year college rose from \$4020 in 1996 to \$7610 in 2011. Find the percent of increase. Round to the nearest tenth of a percent.

$$I = 7610 - 4020 = \$3,590$$

$$3590 = x(4020)$$

$$x = \frac{3590}{4020} = 0.893 \Rightarrow \boxed{89.3\%}$$

- b) The tuition and fees cost of attending a public two-year college rose from \$1900 in 1996 to \$2710 in 2011. Find the percent of increase. Round to the nearest tenth of a percent.

$$I = 2710 - 1900 = 810$$

$$810 = x(1900)$$

$$x = \frac{810}{1900} = 0.426 \Rightarrow \boxed{42.6\%}$$

Still need help with:

TASK 2: Calculating the Percent Increase of Movies

- a) Most of the movie screens globally project analog film, but the number of cinemas using digital is increasing. Find the number of digital screens worldwide in 2012 if, after a 25% increase, the number in 2013 was 111,809. Round to the nearest whole number.

$$x + 0.25x = 111809$$

$$1.25x = 111809$$

$$x = \frac{111809}{1.25} = 89447.2$$

89,447
Screens in
2012

- b) The fastest-growing sector of digital theater screens is 3D. Find the number of digital 3D screens in the United States and Canada is 2012 if, after a 7% increase, the number in 2013 was 15,782. Round to the nearest whole.

$$x + 0.07x = 15,782$$

$$1.07x = 15,782$$

$$x = \frac{15782}{1.07} = 14749.5$$

14,750
Screens
in 2012