Algebra 1 2.7

%

$\frac{27}{100} = 0.27$

Find the percent of change.
Solve problems involving percent of change

\+ increase
— decrease
percent

$\frac{20}{100} = 0.2$

$\frac{18}{100} = 0.18$

$\frac{2}{100} = 0.02$

Compare to original

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

$$\frac{\text{Percent}}{100} = \frac{\text{Change (part)}}{\text{Original (whole)}}$$

State whether each percent of change is a percent of *increase* or a percent of *decrease*. Then find the percent of change. Round to the nearest whole percent.

1. original: 78
   new: 125

2. original: 41
   new: 24

3. original: 6 candles
   new: 8 candles

4. original: 35 computers
   new: 32 computers

I $\frac{2}{6} = \frac{x\%}{100}$

$200 = 6x$

$33\% = x$

D $\frac{3}{35} = \frac{x}{100}$

$35x = 300$

$x = 9\%$

Real-World Example 2 Percent of Change

CRUISE The total number of passengers on cruise ships increased 10% from 2007 to 2009. If there were 17.22 million passengers in 2009, how many were there in 2007?

2007 ?
2009 17.22

$= \frac{10}{100}$ ( )(.10)

Guided Practice

2. **TUITION** A recent percent of increase in tuition at Northwestern University, in Evanston, Illinois, was 5.4%. If the new cost is $33,408 per year, find the original cost per year.

( )·(0.054)

42. RECREATIONAL SPORTS In 1995, there were 73,567 youth softball teams. By 2007, there were 86,049. Determine the percent of increase.

Buy $29.75

Tax 6%

$$\frac{x}{29.75} = \frac{6}{100}$$

$$\frac{100x}{100} = \frac{178.5}{100}$$

$x = 1.785$ 1.79 tax

$$\begin{array}{r} 29.75 \\ +\ 1.79 \\ \hline \$31.54 \end{array}$$

$579.00

$$\frac{x}{579.00} = \frac{6}{100}$$

$$\frac{100x}{100} = \frac{3474}{100}$$

$$34.74$$

$$\begin{array}{r} 579.00 \\ +\ 34.74 \\ \hline 613.74 \end{array}$$

175.00 10% off

-17.50

$\$157.50$

$\frac{x}{175} = \frac{10}{100}$

$100x = 1750$

$x = 17.50$

WB price.

$230.00 25% off

$\frac{x}{230} = \frac{25}{100}$

57.50

$172.50

$\frac{x}{172.50} = \frac{6}{100}$

$x = 10.35$

172.50

10.35

182.85