

Algebra 1 2.7

$$12\% \quad \frac{12}{100}$$

Find the percent of change.

Solve problems involving percent of change

increase \uparrow
decrease \downarrow
percent
sales tax $+$
discount $-$


$$50\% \quad \frac{50}{100}$$

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

Which item had the greatest percent of increase?

Average Retail Prices of Selected Grocery Items		
Grocery Item	Cost in 2000 (\$ per pound)	Cost in 2007 (\$ per pound)
milk (gallon)	2.79	3.87
turkey (whole)	0.99	1.01
chicken (whole)	1.08	1.17
ground beef	1.63	2.23
apples	0.82	1.12
iceberg lettuce	0.85	0.95
peanut butter	1.96	1.88

Source: Statistical Abstract of the United States

44.  **MULTIPLE REPRESENTATIONS** In this problem, you will explore patterns in percentages.

a. **Tabular** Copy and complete the following table.

1% of	500	is 5.	100% of		is 20.		% of 80 is 20.
2% of		is 5.	50% of		is 20.		% of 40 is 20.
4% of		is 5.	25% of		is 20.		% of 20 is 20.
8% of		is 5.	12.5% of		is 20.		% of 10 is 20.

b. **Verbal** Describe the patterns in the second and fifth columns.

c. **Analytical** Use the patterns to write the fifth row of the table.

$\frac{20}{100}$ 20% off tax 6%

Boots \$150

$$150(20) = 30$$

$$\begin{array}{r} 150 \\ - 30 \\ \hline 120 \end{array}$$

$$\frac{6}{100}$$

$$120(.06) = 7.20$$

$$\begin{array}{r} 120.00 \\ + 7.20 \\ \hline 127.20 \end{array}$$

\$600 $\frac{15}{100}$ 15% off $\frac{4}{100}$ 4% tax

$$600(.15) = 90$$

$$\begin{array}{r} 600 \\ - 90 \\ \hline 510 \end{array}$$

$$510 (.04) = 20.4$$

$$\begin{array}{r} 510.00 \\ 20.40 \\ \hline \$530.40 \end{array}$$

12,500 $\frac{5}{100}$ 5% off $\frac{3}{100}$ 3% tax

$$12500(0.05) = 625$$

$$\begin{array}{r} 12500 \\ -625 \\ \hline \end{array}$$

$$11,875(.03) = 356.25$$