Algebra 1 2.7

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

increase ↑
decrease ↓
percent
sales tax ↑
discount ↓

$$\frac{\text{part}}{\text{whole}} = \frac{p}{100}$$

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

Which item had the greatest percent of increase?

Average Retail Prices of Selected Grocery Items			
Grocery Item	Cost in 2000 ([illegible])	Cost in 2007 ([illegible])	
milk (gallon)	2.79	3.87	38.7%
turkey (whole)	0.99	1.01	2.0%
chicken (whole)	1.08	1.17	12%
ground beef	1.63	2.23	36.8%
apples	0.82	1.12	36.5%
iceberg lettuce	0.85	0.95	11.8%
peanut butter	1.96	1.88	-4.1%

Source: Statistical Abstract of the United States

milk inc 38.7%

% incr.

$\frac{1.08}{2.79} = \frac{p}{100}$ $\quad 2.79p = 108$ $\quad \frac{2.79}{2.79} \quad \frac{2.79}{2.79}$

$\frac{.02}{.99} = \frac{p}{100}$ $\quad \frac{.99p}{.99} = \frac{2}{.99}$

$\frac{.10}{.85} = \frac{p}{100}$

$\frac{-0.08}{1.96} = \frac{p}{100}$

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	20	is 20.	25	% of 80 is 20.
2% of	250	is 5.	50% of	40	is 20.	50	% of 40 is 20.
4% of	125	is 5.	25% of	80	is 20.	100	% of 20 is 20.
8% of	62.5	is 5.	12.5% of	160	is 20.	200	% of 10 is 20.

$\frac{20}{80} = \frac{P}{100}$

$\frac{80P}{80} = \frac{2000}{80}$

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

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

35000000

-7

7

35

3.5×10^{7}

3.50000000

$(2.5 \times 10^{4})(8.6 \times 10^{6})$

21.5×10^{10} $+1$ -1

2.15×10^{11}