Section 2-10
Change Expressed as
a Percent

Students will be able to:
  -find percent changes
  -find the relative error in linear and
  nonlinear measurements

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Which is the better discount?

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When a sale is for 20% off, this is an example of percent change.

You can find percent change by the following:
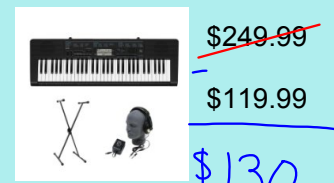
$$\$284 \Rightarrow \$20$$

percent change = amount of increase or decrease
                         original amount

$$\frac{284-20}{284} = \frac{264}{284}$$

$$\approx 93\%$$

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I bought my daughter Taryn this keyboard:

$249.99

$119.99

What was my percent savings?

$130

$$\frac{130}{249.99} \approx 52\%$$

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What is the percent of increase in the cost for a can of pop in the last 20 years?

1996   2016
$.50 $.85

$$\frac{.85-.50}{.50} = \frac{.35}{.5} \approx 70\%$$
increase

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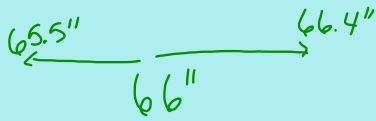You can use percents to compare estimated or measured values to actual or exact values.

Relative Error = |measured or estimated value - actual value|
                              actual value

Miles from Howard to Minneapolis:
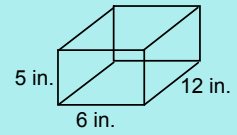
Guess ⇒ 310 miles

$$\frac{310-260}{260} = \frac{50}{260}$$

$$\approx 19\%$$

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Your height is measured at 66 in. to the nearest inch. What are your minimum and maximum possible heights?

65.5"   66.4"

66"

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If the side lengths are measured to the nearest inch, what is the greatest possible percent error in calculating the volume?

5 in.   12 in.   6 in.

estim.

$V = 5(6)(12) = 360 \text{ in}^3$

$V_{min} = (4.5)(5.5)(11.5) = 284.625$

$V_{max} = (5.4)(6.4)(12.4) = 428.544$

$$\begin{array}{r} 360 \\ -284.625 \\ \hline \boxed{75.375} \end{array}$$

$$\begin{array}{r} 428.544 \\ -360 \\ \hline 68.544 \end{array}$$

$.209 \curvearrowright \dfrac{75.375}{360}$

$\approx 21\%$

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Hwk: pg. 148 - 150
#8, 14, 16, 20 - 38 evens

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