

Math 1030 #5b
Use and Abuse of Percentages
Describing Change

EX 1

Eighty percent of students need a review before moving on to a new topic. If there are 48 students in the class, how many need a review?

Describing Change

Absolute Change = new value - reference value (using percentages to describe change)

ex Last year, the price of gas was about \$3.45/ gallon. Now, the price of gas is about \$3.20/gal.

The absolute change is $3.45 - 3.20 = 0.25/\text{gal}$.

Relative Change = $\frac{\text{absolute change}}{\text{reference value}}$

ex For above example,

$$\text{rel. change} = \frac{0.25}{3.45} \approx 7.25\% \text{ decrease.}$$

EX 2:

You bought a car for \$17,500. Now it is worth \$5,000. Find the absolute and relative change in the car's value.

EX 3:

Find the relative change when a quantity

a) triples.

b) quadruples.

Comparing with Percents

(Using percentages for comparisons)

Absolute difference = compared value - reference value.

Ex. My height is 65.5'' and my best friend's height is 68''.

$$\text{abs. diff} = 68 - 65.5 = 2.5''$$

Relative difference = $\frac{\text{absolute difference}}{\text{reference value}}$.

Ex. For above example

$$\text{rel. diff.} = \frac{2.5}{65.5} \approx 3.82\%$$

(i.e. my friend is 3.82% taller than I am)

EX 4:

Compare the life expectancy in Canada (81.2 years) to life expectancy in Russia (65.9 years).

Of vs More or Less Than

A stock has gone to:

150% of the original price.

150% more than the original price.

50% less than the original price.

