



38% MATH 1030 #5b $17/100$

Use and Abuse of Percentages

Describing Change

142%

$33\frac{1}{3}\%$

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,
rel. change = $\frac{0.25}{3.45} \approx 7.25\%$ 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". abs. diff = $68 - 65.5 = 2.5$ "

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

ex For above example
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.

