

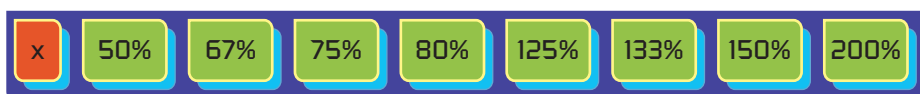
# A Sizeable Problem

You need  a calculator (optional)  a classmate

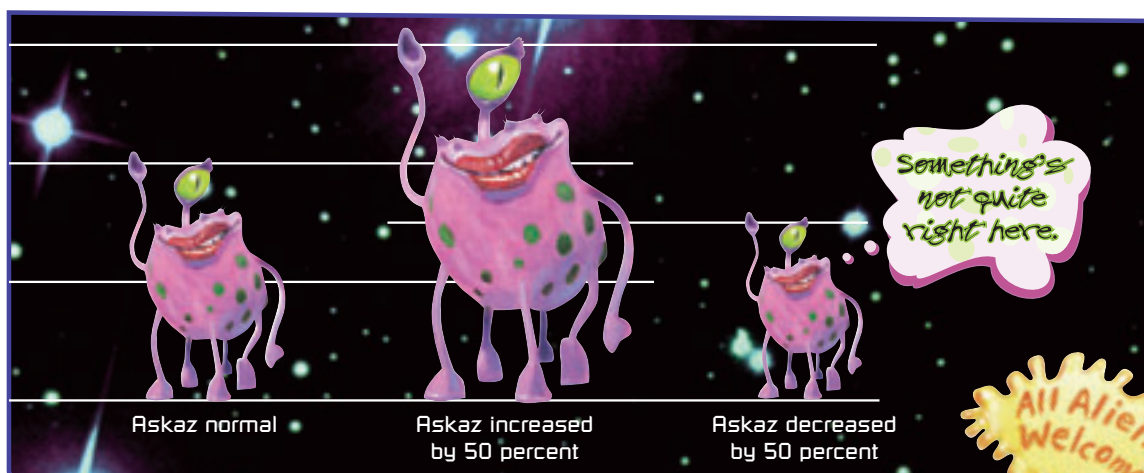
## Activity

The aliens on Planet Proportion have a machine that can make them taller or shorter. They use it when visiting parts of the universe where the locals are taller or shorter than themselves. When they return, they use the machine to change their height back to normal.

Askaz increased her height by 50 percent, using this set of buttons.



She used the same set of buttons when she returned, but she made a mistake:



1.
  - a. Which button did Askaz use to increase her height?
  - b. Which button did she use to reduce her height?
  - c. What was her mistake, and which button should she have pressed?
2. Which buttons do the following aliens use? Which buttons will return them to their normal heights?
  - a. Zadok makes herself 25 percent taller.
  - b. Yonaz makes himself  $\frac{1}{3}$  taller.
  - c. Xenian makes herself 25 percent shorter.
  - d. Halek makes himself 20 percent shorter.
  - e. Kodez makes herself 100 percent taller.



3. Can you find a strategy that will always reverse an increase or decrease of this kind? Explain to a classmate how it works.