

## Estimating with Scientific Notation

$$2.3 \times 10^2$$

1. Light travels 186 thousand miles per second. A year contains 31,536,000 seconds. A light year is the distance light travels in one year. How many miles does light travel in a year? To estimate this, round each of the numbers off and use your knowledge of scientific notation to estimate how many miles it travels.

A. Use a calculator to find the answer. How close were you?

B. The closest star to our sun is Alpha Centauri. It is 4.3 light years away. Approximately how far away is this?

2. Light travels at 186,000 miles per second. It is known that it takes light 500 seconds to reach Earth from the Sun. How far away is the sun from Earth? Again, use scientific notation to estimate the distance.

Use a calculator to find the answer. How close were you?

3. If the national debt was represented in pennies, and those pennies were stacked on top of each other, the stack of pennies would be 394,570,707 miles high. Wow! That is a lot of pennies! There are 5280 feet in one mile. Use scientific notation to estimate the amount of pennies in this stack.

Use a calculator to find the answer. How close were you?