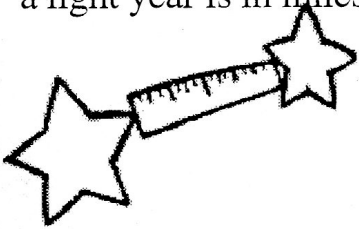


# Measuring Star Distances

As you have already seen, the next closest star besides our sun, Alpha Proxima, is some 35 trillion, 200 billion miles away from our sun. Scientists and astronomers refer to this distance as about 4 light years away from earth. Using a calculator, some new facts presented below, and your knowlegde of using extremely large numbers, calculate how far a light year is in miles.



FACT #1: A light year is the distance light travels in one year.

FACT #2: Light travels 186,000 miles per second.

FACT #3: You need to figure our how many seconds there are in a year.

Think: How many seconds in a minute? \_\_\_\_\_

How many minutes in an hour? \_\_\_\_\_

How many hours in one day? \_\_\_\_\_ How many days in one year? \_\_\_\_\_

What do you do to compute seconds in a year? \_\_\_\_\_

How many seconds are in a year? \_\_\_\_\_

Write the word name for this number. \_\_\_\_\_

Using what you know from certain facts above, how do you think you would figure the number of miles in one light year? \_\_\_\_\_

Check with a friend to see if you are right. If so then, calculate the number of miles in a light year and write your answer below. My friend, \_\_\_\_\_, and I calculated that:

**There are \_\_\_\_\_ miles in a light year.**

Write the word name for this number. \_\_\_\_\_

**EXTRAS FOR EXPERTS:** Write this number in scientific notation. \_\_\_\_\_

\*How many kilometers are there in a light year? \_\_\_\_\_

Write the word name for this number. \_\_\_\_\_

Many stars are thousands of light years distant from our solar system. In fact, our solar system is some 30,000 light years from the center of our galaxy, the Milky Way, which is one of 100 billion ( $1 \times 10^{11}$ ) other galaxies. How astronomers estimate this is another story.