**Triangulation**

**AKA The Parallax Technique**

A method of measuring distance indirectly by creating an imaginary triangle between an observer and an object whose distance you want to estimate.

Point on the distant object

Lines drawn from the baseline ends to the point on the distant object

Angles to be measured

Baseline

(the longer the more accurate)

Distance to be measured in a scale diagram

To use triangulation you need to know the length of one side of the triangle—the **baseline** and **the size of the two angles** that would be created when imaginary lines are drawn from either end of the baseline to the same point on the distant object.

**Triangulation Method:**

1. Create a baseline.
2. Measure the angles from the ends of the baseline to a point on the distant object.
3. Choose an appropriate scale and make a scale drawing of the imaginary triangle.

**Triangulating a Star**

Take sightings of the star \_\_\_\_\_\_\_\_\_ months apart to work from the longest baseline possible without leaving Earth. This would make the baseline the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. The star will appear to have moved against the background of fixed stars behind it which are much further away. This apparent shift in position is called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and it is used to provide reference points for measuring the two \_\_\_\_\_\_\_\_\_\_\_.

*See p. 389 Figure 5.32!*

One astronomical unit (AU) is equal to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ which is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ km. A light year represents \_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. Light travels at \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ km/s. A light year is about \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ km.

One light year is about \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ astronomical units.