

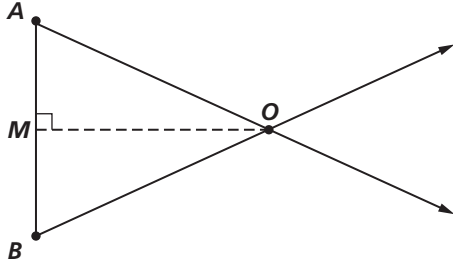
Name _____

10-3A Lesson Master

Questions on SPUR Objectives
See Student Edition pages 724–727 for objectives.

USES Objective G

1. Refer to the diagram below. If the distance $AB = 3$ ft and the parallax angle $\angle AOM$ measures 12° , find the distance OM .



2. Suppose points A and B in the diagram above represent your two eyes, and O is an object held in front of you. Explain why the tangent of $\angle AOM$ will get smaller as the distance OM increases.

3. An item has a parallax angle of 4.1° from two sites 10 mi apart. How far away is the item?
4. One evening just after dusk, two friends view the International Space Station. Celia in Prague and Dele in Munich determine that the parallax angle is 23.3° . Prague is 301 km from Munich. What was the altitude of the International Space Station?

In 5 and 6, use the following information.

- Parallax angles are measured from opposite sides of Earth's orbit.
 - Earth's orbit around the sun is approximately a circle with diameter 186,000,000 miles.
 - One light-year (the distance that light travels in one year) is approximately $5.88 \cdot 10^{12}$ miles.
5. One of the closest stars to Earth is called Barnard's Star. It has a parallax angle of $(1.52 \cdot 10^{-4})^\circ$. Estimate the distance to Barnard's Star, to the nearest light-year.
6. Polaris, the North Star, is a distance of 431 light-years from Earth. Estimate its parallax angle. Give your answer in scientific notation.