

**Solve each of the following problems. Show your complete solution, including an appropriate diagram, neatly organized in the space provided. All answers should be rounded to the nearest tenth.**

**1. The shadow of a flag pole (on level ground) is 20 feet long when the angle of elevation to the sun is 54 degrees. How tall is the flag pole?**

**2. A ladder that is 15 feet long leans up against a vertical wall. If the ladder makes an angle of 28 degrees with the wall, then how far is the foot of the ladder away from the base of the wall.**

## General Algebra II Worksheet #3 Unit 13 page 2

Solve each of the following problems. Show your complete solution, including an appropriate diagram, neatly organized in the space provided. All answers should be rounded to the nearest tenth.

3. An airplane takes off on level ground with a constant speed of 150 feet per second. If its flight path makes an angle of 20 degrees with the ground, then how high above the ground will it be five seconds after 'lift off'?

4. A rectangle is 8 centimeters long and 6 centimeters wide. If a diagonal of the rectangle is drawn, then what is the angle between the diagonal and the longer side of the rectangle?

## General Algebra II Worksheet #3 Unit 13 page 3

Solve each of the following problems. Show your complete solution, including an appropriate diagram, neatly organized in the space provided. All answers should be rounded to the nearest tenth.

5. A helicopter is flying 600 feet above level ground at a constant speed of 75 feet per second. What is the angle of elevation to the helicopter exactly 30 seconds after it flies directly overhead?

6. A cell tower is steadied by several guy wires. Each wire is anchored at a point that is 100 feet from the base of the tower on level ground. If the angle between each wire and the ground is 50 degrees, then how long is each wire?