

**General Algebra II Class Worksheet #2 Unit 13 page 1 \_\_\_\_\_**

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

**1. Tom is 500 feet from a very tall building on level ground. If the angle of elevation to the top of the building is 20 degrees, then how tall is the building?**

**2. A guy wire goes from the top of a vertical pole to a point that is 10 meters from the base of the pole on level ground. If the wire makes an angle of 55 degrees with the ground, then how long is the wire?**

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

3. An airplane takes off on level ground with a constant speed of 120 feet per second. If its flight path makes an angle of 15 degrees with the ground, then how high above the ground will it be 5 seconds after 'lift off'?

4. A rectangle is 6 centimeters long and 5 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?

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

5. A ladder that is 20 feet long leans up against a vertical wall. If the ladder makes an angle of 70 degrees with the level ground, then how far up the wall does the ladder extend?

6. My house is located 6 miles due south of 'the center'. Your house is located 7 miles due east of 'the center'. What is the straight line distance from my house to your house?