

Directions: Do your work on a separate sheet of paper. Write your answers in complete sentences.

1. A batter hits a baseball ball into the air. The height h (in feet) of the baseball after t seconds is given by $h = -16t^2 + 80t + 4$.

- Clearly define your variables.
- When is the baseball at a height of 104 feet? Explain why there is just one such time.
- When is the baseball at a height of 68 feet? Explain why there are two such times.
- How high is the baseball after 2 seconds?
- When is the baseball at a height of 110 feet?

2. A company's profit can be modeled by $p = t^2 - 3t + 5$, where p is the profit (in thousands of dollars) for the year that is t years since 2005. Predict when the profit was or will be \$23 thousand.

Remember to clearly define your variables.

3. A rectangular living room floor has an area of 64 square feet. If the length is 12 feet more than the width, find the dimensions of the floor.

- In your own words, paraphrase what this problem is asking you to find.
- Identify the facts.
- Draw a picture.
- Identify any formulas you may need.
- Clearly define your variables.
- Translate and solve.
- Write your answer in a complete sentence.