Solve each of the following problems algebraically. Show your work neatly organized.

1. One number is four less than two times another. Their product is six. What are the numbers?

2. One number is equal to the square of another. Their sum is 72. What are the numbers?

3. The product of two consecutive odd integers is 15 more than four times the smaller integer. What are the integers?

Solve each of the following problems algebraically. Show your work neatly organized.

4. A border of uniform width is to be placed around a photograph in such a way that its area is equal to the area of the photograph. How wide must the border be if the photograph measures 12 inches by 5 inches?

5. Bill has a square garden and wants to make it larger by increasing one dimension by 5 feet and the other by 2 feet. What are the dimensions of the new rectangular garden if its area is 130 square feet?

6. If a toy rocket is launched upward with an initial velocity of 30 meters per second, then its height above the ground after t seconds is given by the equation $h = 30t – 5t^2$. When will the rocket be 40 meters above the ground?