

Write a second degree equation in one variable to solve each of the following problems. Express irrational solutions rounded to the nearest tenth. (Many of these problems have two solutions.) Show your work and your solutions neatly organized.

1. One number is 5 more than twice another. Their product is 3. What are the numbers?

2. One number is 3 more than 5 times another. Their product is 20. What are the numbers?

3. The area of a rectangle is 8 square inches. Find its dimensions if its length is 2 inches more than 3 times its width.

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4. The sum of a number and its square is 30. What is the number?

5. The length of the longer leg of a right triangle is 2 inches more than twice the length of the shorter leg. The length of the hypotenuse is 2 inches less than 3 times the length of the shorter leg. How long is each side of the triangle?

6. A rectangular garden is 16 feet long and 12 feet wide. It is surrounded by a path of uniform width. Find the width of the path if its area is 204 square feet.