

DIRECTIONS: Solve each problem. If there are two correct answers, give both of them.

1. The sum of a number and its square is 72. Find the number.
-9, 8
2. Find a number that is 56 less than its square.
-7, 8
3. Find two consecutive odd integers whose product is 143.
-13, -11 and 11, 13
4. Find two consecutive odd integers the sum of whose squares is 130.
-9, -7 and 7, 9
5. A rectangle is 4 cm longer than it is wide, and its area is 117 cm^2 . Find its dimensions.
9 cm & 13 cm
6. A rectangular garden has a perimeter of 66 ft and an area of 216 ft^2 . Find the dimensions of the garden.
7. The area of a right triangle is 44 m^2 . Find the lengths of its legs if one of the legs is 3 m longer than the other.
8 m & 11 m
8. Two ships leave port, one sailing east and the other sailing south. Later, they are 17 miles apart, with the eastbound ship 7 miles farther from port than the southbound ship. How far is each from port?
Eastbound: 15 miles Westbound: 8 miles
9. The top of a 15-foot ladder is 3 ft farther up a wall than the foot of the ladder is from the bottom of the wall. How far is the foot of the ladder from the bottom of the wall?
9 ft
10. The height of a triangle is 7 cm greater than the length of its base, and its area is 15 cm^2 . Find the height.

- 11.** The hypotenuse of a right triangle is 25 m long. The length of one leg is 10 m less than twice the other. Find the length of each leg.
15 m & 20 m
- 12.** The side of a large tent is in the shape of an isosceles triangle whose area is 54 ft^2 and whose base is 6 ft shorter than twice its height. Find the height and the base of the side of the tent.
Height: 9 ft Base: 12 ft
- 13.** A rectangle is 15 cm wide and 18 cm long. If both dimensions are decreased by the same amount, the area of the new rectangle formed is 116 cm^2 less than the area of the original. Find the dimensions of the original rectangle.
- 14.** A rectangle is twice as long as it is wide. If its length is increased by 4 cm and its width is decreased by 3 cm, the resulting rectangle has an area of 100 cm^2 . Find the dimensions of the original rectangle.
8 cm & 16 cm
- 15.** When 0.5 cm was planed off each of the six faces of a wooden cube, its volume decreased by 169 cm^3 . Find its new volume.
- 16.** The width, length, and diagonal of a rectangle are consecutive even integers. Find the integers.
6, 8, and 10
- 17.** A rectangular corner lot, originally twice as long as it was wide, lost a 2-meter strip along two adjacent sides due to street widening. Its new area is 684 m^2 . Find its new dimensions.