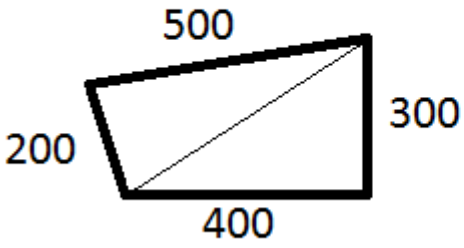
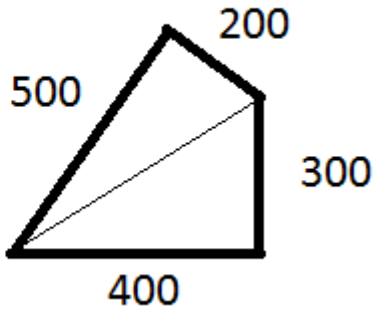
There are 2 possible arrangements sides of the quadrilateral.





In either case the diagonal shown is 500 by the Pythagorean Theorem. The bottom triangle is a right triangle with base 400 and height 300 so its area is ½ x 400 x 300 = 60,000. The top triangle is an isosceles triangle with sides 500, 500, and 200. To find its area, drop a perpendicular from the point where the 2 sides of length 500 meet to the middle of the length 200 side. By the Pythagorean Theorem the length of this perpendicular is the square root of 240,000. So the area of the isosceles triangle is ½ x 200 x √240000= 48990, because the problem asked for the area rounded to the nearest square foot.

Adding the area of the two triangle yields the total area which is 108,990 square feet.