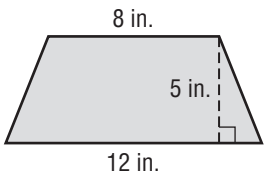
NAME _____ DATE _____ PERIOD _____

Enrich

Trapped in a Trapezoid

Ants are very strong for their size. (Some ants can carry 50 times their own body weight.) Suppose that an ant is trapped inside a trapezoid with the dimensions shown below.



The area of the trapezoid is _____ .

The ant can change the dimensions by pushing on the sides of the trapezoid. This will have an effect on the area.

1. Suppose the ant pushes the left side of the trapezoid so that the length of the top base doubles. Draw the figure and find its area.

2. Determine how the area would be different if the ant changed the trapezoid so that the length of the bottom base doubled instead.

3. Suppose the ant only pushes along the bases so that the height doubles, while the lengths of the bases remain unchanged. What would be the area of the trapezoid?

4. Suppose the ant triples one of the dimensions so that the area of the new trapezoid is 110 square inches. Which dimension would this be?

5. Suppose the ant doubles one dimension and triples another so that the area of the new trapezoid is 180 square inches. Tell which dimensions changed, and by what amount.