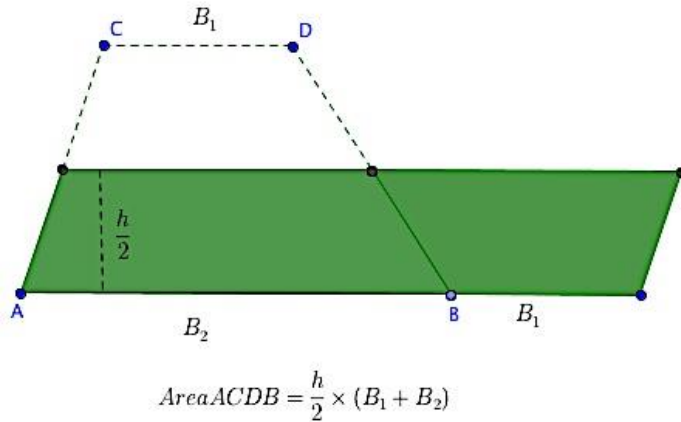
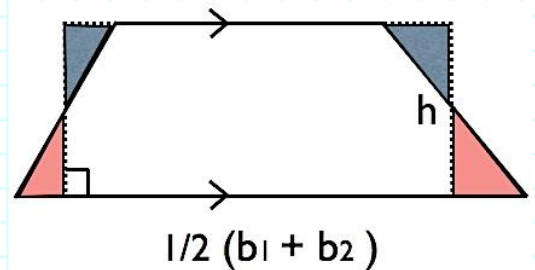


Measurement: Area of Trapezoids

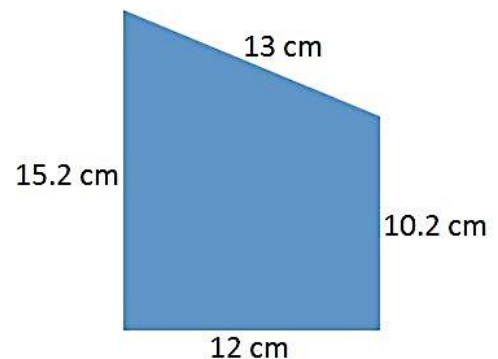
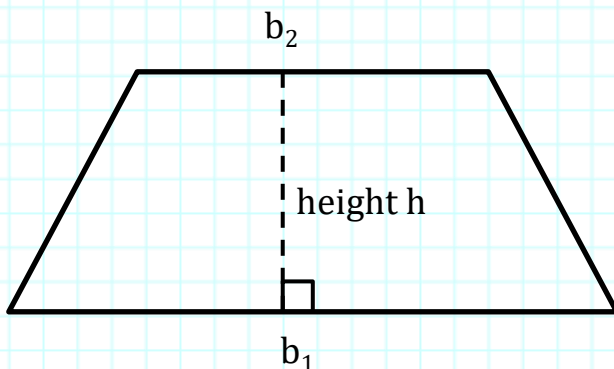
The picture below illustrates the trapezoid formula derivation we performed in class. By cutting the trapezoid along a line parallel to both bases at the midpoint of the trapezoid's height, the pieces can be rearranged to form a parallelogram. Using the formula $A=bh$ for a parallelogram, results in $A = \frac{1}{2}(b_1+b_2)h$, the formula for area of a trapezoid, when $\frac{1}{2}h$ is substituted for the parallelogram's height and (b_1+b_2) is substituted for the parallelogram's base length.



Another way to understand the trapezoid area formula is by realizing that $\frac{1}{2}(b_1 + b_2)$ is a calculation of the mean (or average) of the base lengths. When this average size base is shown below, it becomes clear that the area of the trapezoid is equal to the area of the rectangle shown where the base is $\frac{1}{2}(b_1 + b_2)$ and the height is h .



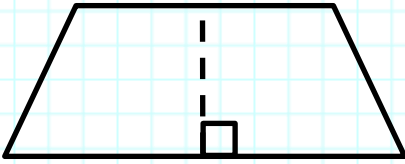
Area of a Trapezoid: $A = \frac{1}{2}(b_1+b_2)h$



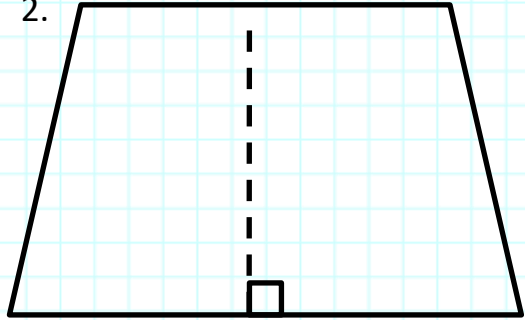
It is important to remember that the bases are the parallel sides of the trapezoid, because trapezoids are not always pictured with their bases oriented horizontally (see the blue trapezoid above).

Measure each trapezoid in centimeters (round to the nearest half-centimeter). Then, calculate the area of each trapezoid.

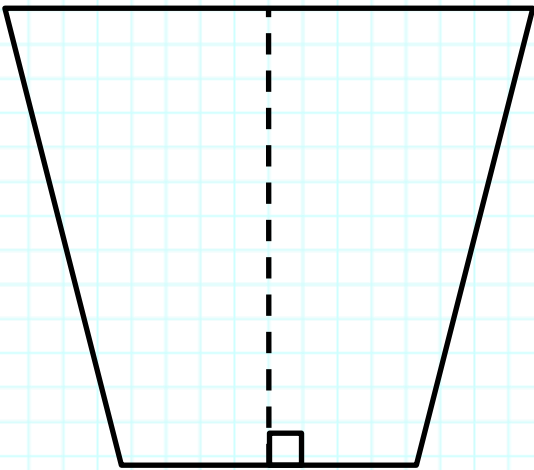
1.



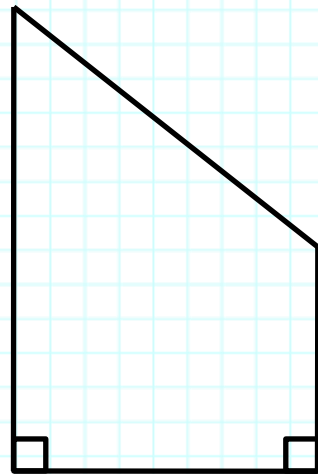
2.



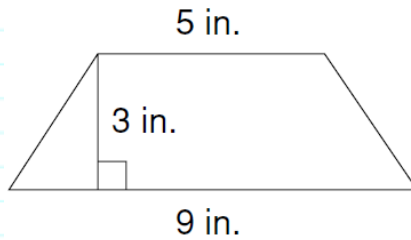
3.



4.



Find the area of this trapezoid:



Find the area of this trapezoid:

