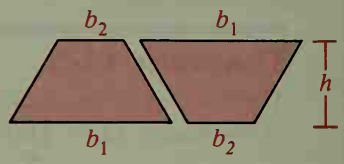
4. Use your answers from Exercises 1–3 to explain why the area of a trapezoid can be given by the formula

$$Area = height \times median.$$

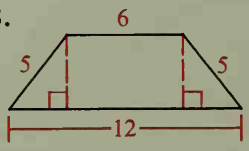
5. Does the median of a trapezoid divide it into two regions of equal area?

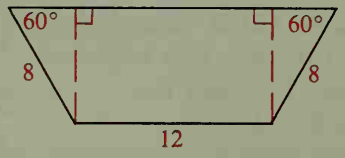
6. Does the segment joining the midpoints of the parallel sides of a trapezoid divide it into two regions of equal area?

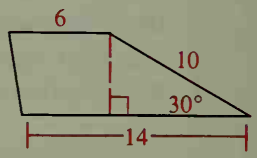
7. **a.** If the congruent trapezoids shown are slid together, what special quadrilateral is formed?
   b. Use your answer in part (a) to derive the formula $A = \frac{1}{2}h(b_1 + b_2)$.



Find the area of each trapezoid.

8. 

9. 

10. 

Written Exercises

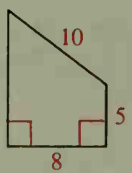
Exercises 1–8 refer to trapezoids and m is the length of the median. Complete the table.

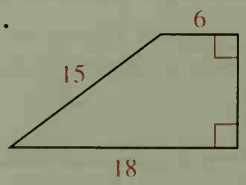
A

	1.	2.	3.	4.	5.	6.	7.	8.
b_1	12	6.8	$3\frac{1}{6}$	45	27	3	7	?
b_2	8	3.2	$4\frac{1}{3}$	15	9	?	?	$3k$
h	7	6.1	$1\frac{3}{5}$	?	?	3	$9\sqrt{2}$	$5k$
A	?	?	?	300	90	12	$36\sqrt{2}$	$45k^2$
m	?	?	?	?	?	?	?	?

9. A trapezoid has area 54 and height 6. How long is its median?

In Exercises 10–18, find the area of each trapezoid.

10. 

11. 

12.