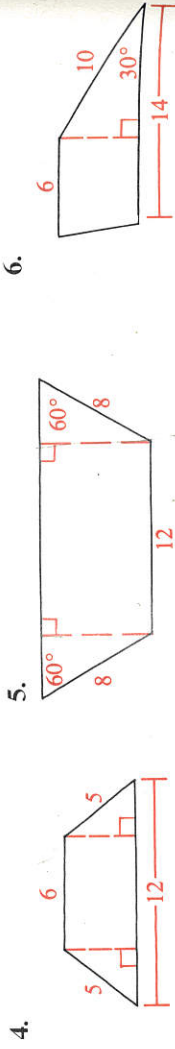
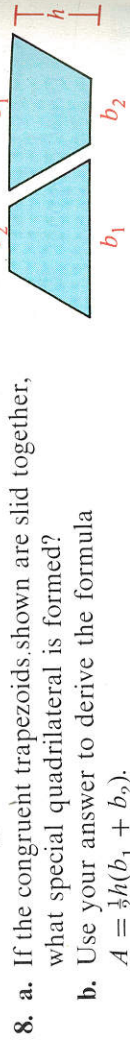


Find the area of each trapezoid.



7. a. Find the lengths of the medians of the trapezoids in Exercises 1–3.
 b. Explain why the area of a trapezoid can also be given by the formula $\text{Area} = \text{height} \times \text{median}$.



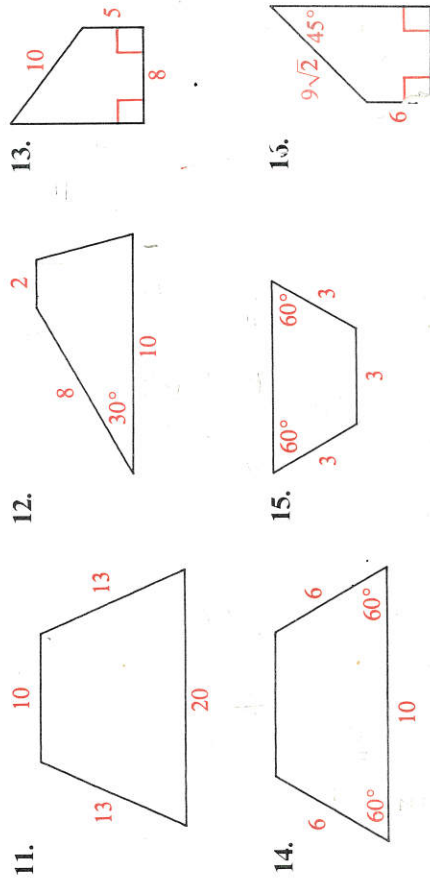
Written Exercises

Exercises 1–8 refer to trapezoids. Complete the table.

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

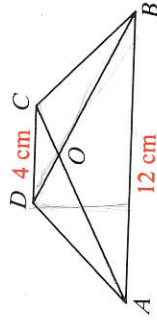
9. Find the lengths of the medians of the trapezoids in Exercises 1–3.
 10. A trapezoid has area 54 and height 6. How long is its median?

Find the area of each trapezoid.



17. An isosceles trapezoid with 45° base angles has bases 8 and 20. Find its area.
18. a. The legs of an isosceles trapezoid are 10 cm and the bases are 9 cm and 21 cm. Find the area of the trapezoid.
 b. Find the lengths of the diagonals.
19. An isosceles trapezoid has bases 12 and 28. The area is 300.
 a. Find the height.
 b. Find the perimeter.

20. The bases of trapezoid $RSTV$ are \overline{RS} and \overline{VT} . $RS = 5$, $VT = 11$, $RV = 4$, and $m\angle V = 37^\circ$. Find the area of the trapezoid, correct to the nearest tenth. (Use the trigonometry table on page 271 or a calculator.)
21. In trapezoid $ABCD$, $m\angle A = m\angle B = 90^\circ$, $AB = 16$, $BC = 8$, and $AD = 12$. If M is the midpoint of \overline{AB} , find the area of $\triangle DMC$.
22. $ABCD$ is a trapezoid with bases 4 cm and 12 cm, as shown. Find the ratio of the areas of:

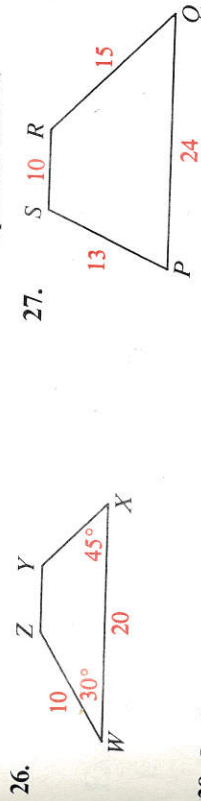


- a. $\triangle ABD$ and $\triangle ABC$
 b. $\triangle AOD$ and $\triangle BOC$
 c. $\triangle ABD$ and $\triangle ADC$

23. $ABCDEF$ is a regular hexagon with side 12. Find the areas of the three regions formed when diagonals \overline{AC} and \overline{AD} are drawn.
24. An isosceles trapezoid with bases 12 and 16 is inscribed in a circle of radius 10. The center of the circle lies in the interior of the trapezoid. Find the area of the trapezoid.

- C 25. Draw a non-isosceles trapezoid, then construct an isosceles trapezoid with equal area.

For Exercises 26 and 27, find the area of the trapezoid shown.



28. In the figure given below, prove that the area of square $ABCD$ equals the area of rectangle $EFGD$.



Ex. 28

Ex. 29

- ★29. If $NS = 16$, find the area of $\square MNOP$ shown above.