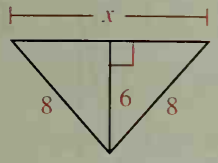
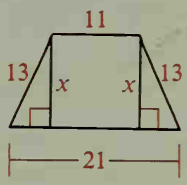
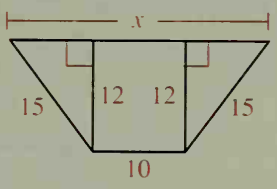
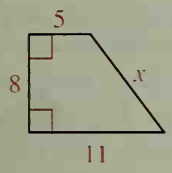
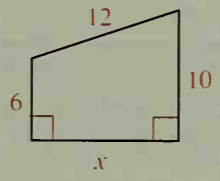
Find the value of x.

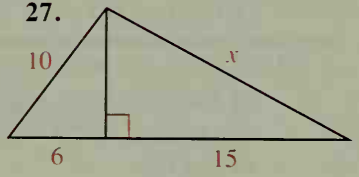
22. 

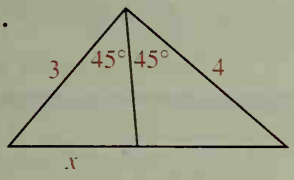
23. 

24. 

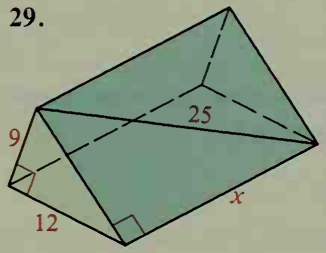
25. 

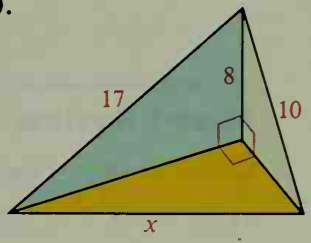
26. 

27. 

28. 

(*Hint*: Use the Angle-Bisector Theorem, p. 270.)

29. 

30. 

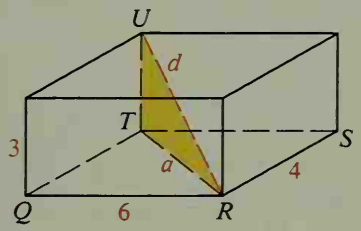
31. A right triangle has legs of 6 and 8. Find the lengths of:
a. the median to the hypotenuse **b.** the altitude to the hypotenuse.

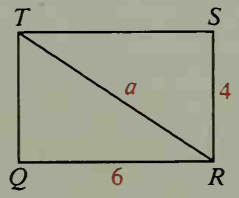
32. A rectangle is 2 cm longer than it is wide. The diagonal of the rectangle is 10 cm long. Find the perimeter of the rectangle.

In Exercises 33–36 the dimensions of a rectangular box are given. Sketch the box and find the length of a diagonal of the box.

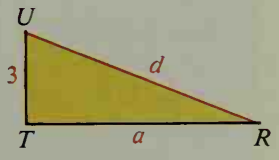
Example Dimensions 6, 4, 3

Solution





$a^2 = 6^2 + 4^2$
$a^2 = 36 + 16$
$a^2 = 52$



$d^2 = a^2 + 3^2$
$d^2 = 52 + 9$
$d^2 = 61$
$d = \sqrt{61}$

33. 12, 4, 3 **34.** 5, 5, 2 **35.** e, e, e **36.** l, w, h