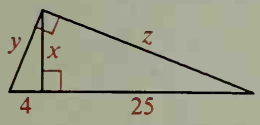
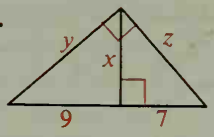
Find the values of x, y, and z.

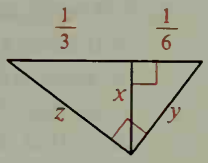
31.



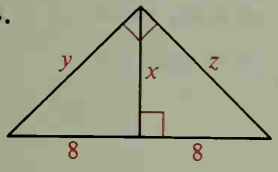
32.



33.



34.



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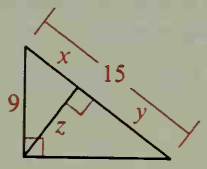
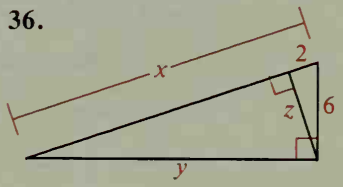
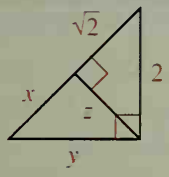


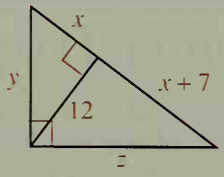
36.



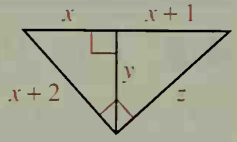
37.



38.



39.

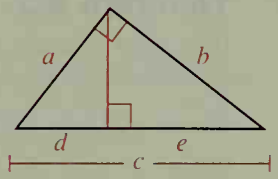


40. Prove Theorem 8-1.

41. **a.** Refer to the figure at the right, and use Corollary 2 to complete:

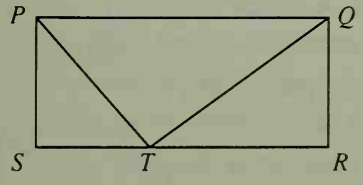
$a^2 =$ ___?___ and $b^2 =$ ___?___

b. Add the equations in part (a), factor the sum on the right, and show that $a^2 + b^2 = c^2$.



C **42.** Prove: In a right triangle, the product of the hypotenuse and the length of the altitude drawn to the hypotenuse equals the product of the two legs.

43. Given: $PQRS$ is a rectangle; PS is the geometric mean between ST and TR.
Prove: $\angle PTQ$ is a right angle.



44. Given: $PQRS$ is a rectangle; $\angle A$ is a right angle.
Prove: $BS \cdot RC = PS \cdot QR = (PS)^2$