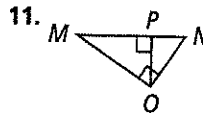
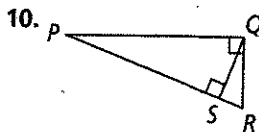
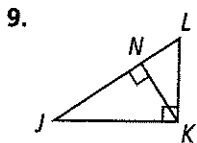


Practice and Problem-Solving Exercises



Write a similarity statement relating the three triangles in each diagram.

See Problem 1.



Algebra Find the geometric mean of each pair of numbers.

See Problem 2.

12. 4 and 10

13. 3 and 48

14. 5 and 125

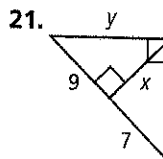
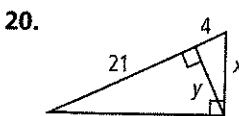
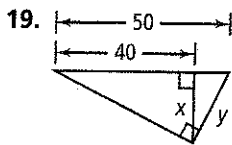
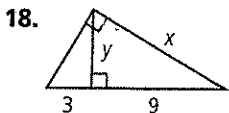
15. 7 and 9

16. 3 and 16

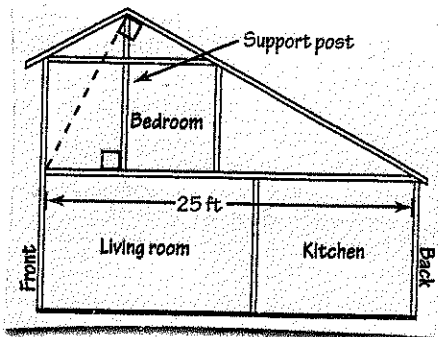
17. 4 and 49

Algebra Solve for x and y .

See Problems 3 and 4.



22. **Architecture** The architect's side-view drawing of a saltbox-style house shows a post that supports the roof ridge. The support post is 10 ft tall. How far from the front of the house is the support post positioned?



23. a. The altitude to the hypotenuse of a right triangle divides the hypotenuse into segments 2 cm and 8 cm long. Find the length of the altitude to the hypotenuse.
 b. Use a ruler to make an accurate drawing of the right triangle in part (a).
 c. **Writing** Describe how you drew the triangle in part (b).

Algebra Find the geometric mean of each pair of numbers.

24. 1 and 1000

25. 5 and 1.25

26. $\sqrt{8}$ and $\sqrt{2}$

27. $\frac{1}{2}$ and 2

28. $\sqrt{28}$ and $\sqrt{7}$

29. **Reasoning** A classmate says the following statement is true: The geometric mean of positive numbers a and b is \sqrt{ab} . Do you agree? Explain.

30. **Think About a Plan** The altitude to the hypotenuse of a right triangle divides the hypotenuse into segments with lengths in the ratio 1 : 2. The length of the altitude is 8. How long is the hypotenuse?

- How can you use the given ratio to help you draw a sketch of the triangle?
- How can you use the given ratio to write expressions for the lengths of the segments of the hypotenuse?
- Which corollary to Theorem 7-3 applies to this situation?