

Similarity in Right Triangles; The Pythagorean Theorem

For use after Section 8-2

Simplify.

1. $\sqrt{100}$ 10

2. $2\sqrt{50}$ $10\sqrt{2}$

3. $\sqrt{20} \cdot \sqrt{6}$ $2\sqrt{30}$

4. $\frac{2}{\sqrt{5}}$ $\frac{2\sqrt{5}}{5}$

5. $\sqrt{\frac{1}{3}}$ $\frac{\sqrt{3}}{3}$

6. $(\frac{\sqrt{3}}{3})^2$ $\frac{1}{3}$

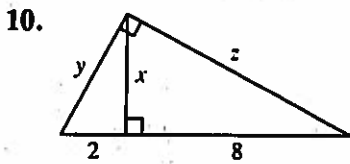
Find the geometric mean between the two numbers.

7. 6 and 24 12

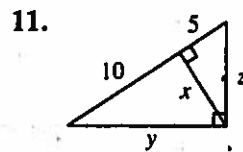
8. 3 and 12 6

9. 3 and 64 $8\sqrt{3}$

Each diagram shows a right triangle with the altitude drawn to the hypotenuse. Find the values of x , y , and z .

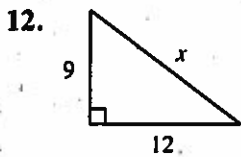


$x =$ 4, $y =$ $2\sqrt{5}$, $z =$ $4\sqrt{5}$

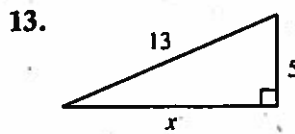


$x =$ $5\sqrt{2}$, $y =$ $5\sqrt{6}$, $z =$ $5\sqrt{3}$

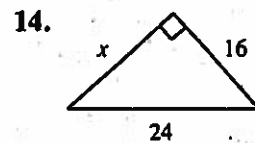
Find the value of x .



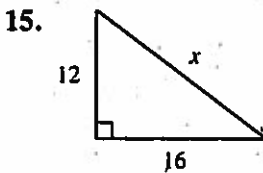
$x =$ 15



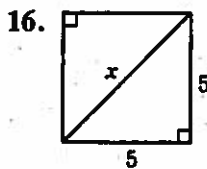
$x =$ 12



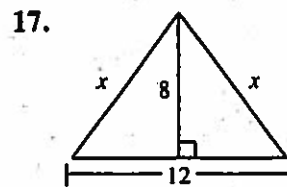
$x =$ $8\sqrt{5}$



$x =$ 20



$x =$ $5\sqrt{2}$



$x =$ 10

18. A rectangle has length 2.4 m and width 0.7 m. Find the length of a diagonal. 2.5 m

19. A square has perimeter 12 cm. Find the length of a diagonal. $3\sqrt{2}$ cm

20. The diagonals of a rhombus have lengths 12 and 16. Find the perimeter of the rhombus. 40