Find the value of *x*. Write your answer in simplest radical form.

1.

2.

3.

4.

5.

6.

7.

8.

9.

10.

11.

12.
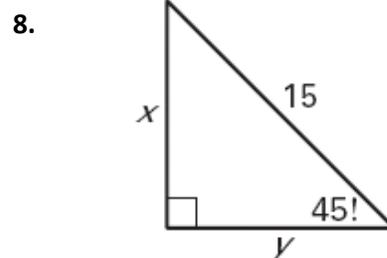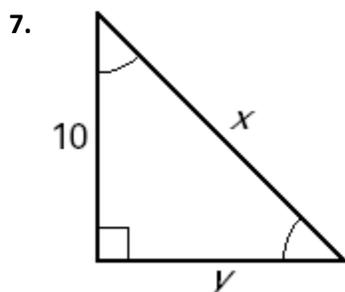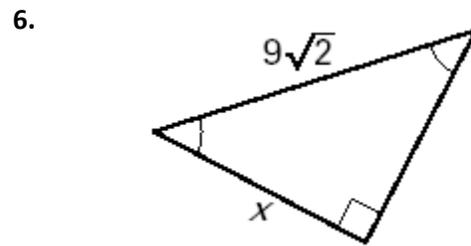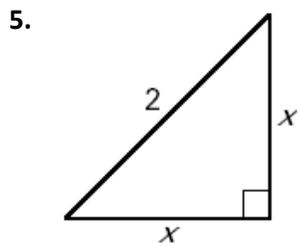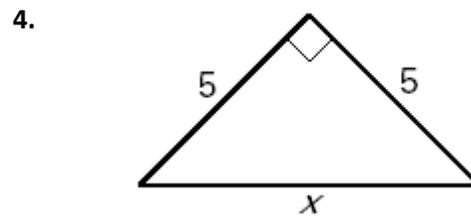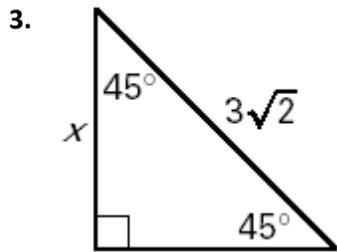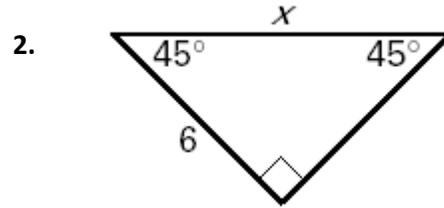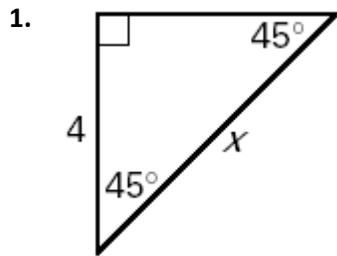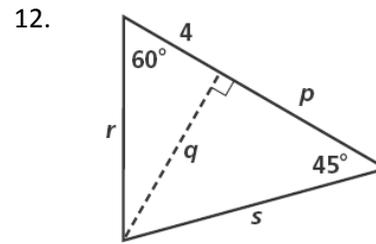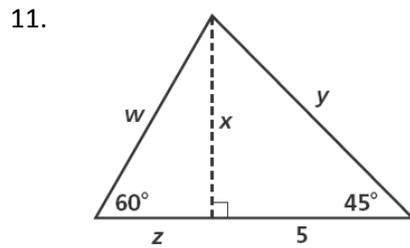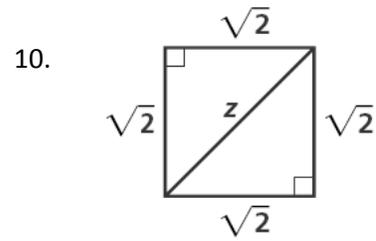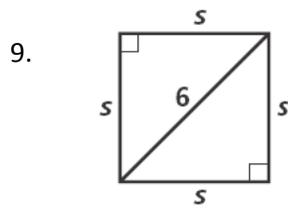
13. Find the length of the diagonal of a square with 30 cm on a side in simplest radical form.

14. The perimeter of a square is 40 centimeters. Find the length of a diagonal in simplest radical form.

Answer Key:

1) $4\sqrt{2}$ 2) $6\sqrt{2}$ 3) 3   4) $5\sqrt{2}$ 5) $\sqrt{2}$ 6) 9   7) x=$10\sqrt{2}$, y=10   8) x=$\dfrac{15\sqrt{2}}{2}$, y=$\dfrac{15\sqrt{2}}{2}$ 9)$s = 3\sqrt{2}$

10) z = 2   11) $w = \dfrac{10\sqrt{3}}{3}$, x = 5, $y = 5\sqrt{2}$, $z = \dfrac{5\sqrt{3}}{3}$ 12) $p = 4\sqrt{3}, q = 4\sqrt{3}$, r = 8, $s = 4\sqrt{6}$ 13) $30\sqrt{2}$

14) $10\sqrt{2}$