Answer Key · Lesson 2.4: Angle Pairs and the Vertical Angles Theorem

School Launch · Geometry · Unit 2 · Worksheet A · for the parent

Key

1. 21°

Two angles are vertical angles. One measures 21°. Find the other.

2. 20°

Two angles are vertical angles. One measures 20°. Find the other.

3. 16°

Two angles are complementary. One measures 74°. Find the other.

4. $x = 7$; 23° and 157°

1. The parts add to 180: $(4x - 5) + (4x + 129) = 180$
2. $8x + 124 = 180 \Rightarrow x = 7$
3. Parts: 23 and 157

Two supplementary angles measure $(4x - 5)^\circ$ and $(4x + 129)^\circ$. Find x and both angles.

5. $x = 11$; 47° and 133°

1. The parts add to 180: $(3x + 14) + (x + 122) = 180$
2. $4x + 136 = 180 \Rightarrow x = 11$
3. Parts: 47 and 133

Two supplementary angles measure $(3x + 14)^\circ$ and $(1x + 122)^\circ$. Find x and both angles.

6. $x = 17$; 32°

1. Set them equal: $x + 15 = 2x - 2$
2. $-x = -17$, so $x = 17$
3. Substitute: $1(17) + 15 = 32$

Vertical angles measure $(1x + 15)^\circ$ and $(2x - 2)^\circ$. Find x and the angle.

7. $x = 18$; 64°

1. Set them equal: $3x + 10 = 4x - 8$
2. $-x = -18$, so $x = 18$
3. Substitute: $3(18) + 10 = 64$

Vertical angles measure $(3x + 10)^\circ$ and $(4x - 8)^\circ$. Find x and the angle.

8. $x = 18$; 57° and 33°

1. The parts add to the whole: $(3x + 3) + (x + 15) = 90$
2. $4x + 18 = 90 \Rightarrow x = 18$
3. Parts: 57 and 33

Two complementary angles measure $(3x + 3)^\circ$ and $(1x + 15)^\circ$. Find x and both angles.

9. $x = 9$; 13° and 77°

1. The parts add to the whole: $(x + 4) + (2x + 59) = 90$
2. $3x + 63 = 90 \Rightarrow x = 9$
3. Parts: 13 and 77

Two complementary angles measure $(1x + 4)^\circ$ and $(2x + 59)^\circ$. Find x and both angles.

10. $x = 17$; 56° and 34°

1. The parts add to the whole: $(3x + 5) + (3x - 17) = 90$
2. $6x - 12 = 90 \Rightarrow x = 17$
3. Parts: 56 and 34

Two complementary angles measure $(3x + 5)^\circ$ and $(3x - 17)^\circ$. Find x and both angles.