

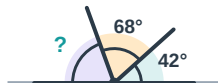
Adjacent Angles Challenge

Grade 5 • Multi-step angle reasoning

Name: _____ Date: _____

Directions: Solve each challenge. The diagram shows the real part sizes. Show your steps and include degree symbols.

1.

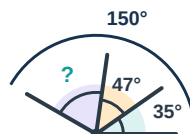


Three adjacent angles form a straight line. Two measure 42° and 68° . Find the third.

Work: _____

Answer: _____

2.

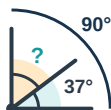


A 150° angle is split into three adjacent angles. Two measure 35° and 47° . Find the third.

Work: _____

Answer: _____

3.



Two adjacent angles form a right angle. One is 37° . Find the other.

Work: _____

Answer: _____

4.

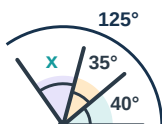


Three adjacent angles make 180° . Two measure 2° and 79° . Find the third.

Work: _____

Answer: _____

5.

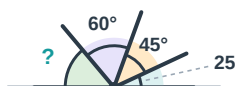


A 125° angle is split into three parts: 40° , 35° , and x° . Find x .

Work: _____

Answer: _____

6.

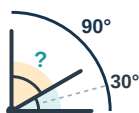


A straight angle is split into four adjacent angles. Three are 25° , 45° , and 60° . Find the fourth.

Work: _____

Answer: _____

7.

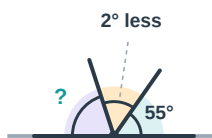


A 90° angle is split into two adjacent angles. The smaller is 30° and the larger is twice the smaller. Find the larger.

Work: _____

Answer: _____

8.



Three adjacent angles form 180° . The first is 55° and the second is 2° less than the first. Find the third.

Work: _____

Answer: _____

9.

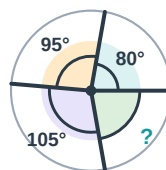


A 140° angle is split into two adjacent angles. One is 18° more than the other. Find both angles.

Work: _____

Answer: _____

10.



Four adjacent angles make a full turn of 360° . Three are 80° , 95° , and 105° . Find the fourth.

Work: _____

Answer: _____

Answer Key

Adjacent Angles Challenge

Answers

1. **70°**

$$180^\circ - 42^\circ - 68^\circ = 70^\circ$$

2. **68°**

$$150^\circ - 35^\circ - 47^\circ = 68^\circ$$

3. **53°**

$$90^\circ - 37^\circ = 53^\circ$$

4. **99°**

$$180^\circ - 2^\circ - 79^\circ = 99^\circ$$

5. **50°**

$$125^\circ - 40^\circ - 35^\circ = 50^\circ$$

6. **50°**

$$180^\circ - 25^\circ - 45^\circ - 60^\circ = 50^\circ$$

7. **60°**

$$2 \times 30^\circ = 60^\circ \text{ (and } 30^\circ + 60^\circ = 90^\circ)$$

8. **72°**

$$55^\circ - 2^\circ = 53^\circ; 180^\circ - 55^\circ - 53^\circ = 72^\circ$$

9. **61° and 79°**

$$(140^\circ - 18^\circ) \div 2 = 61^\circ; 61^\circ + 18^\circ = 79^\circ$$

10. **80°**

$$360^\circ - 80^\circ - 95^\circ - 105^\circ = 80^\circ$$

Marking note

Questions 7, 8 and 9 are the multi-step ones. A student has to work out a part before they can subtract it: 7 needs $2 \times 30^\circ$ first, 8 needs $55^\circ - 2^\circ$, and 9 needs the 18° taken off the whole before halving. Give the method marks even where the final subtraction slips.

Question 9 wants both angles. One number on its own is half an answer.

Every item can be checked by adding the parts back: they must make the whole the question names — 90° , 125° , 140° , 150° , 180° or a full 360° .