

Angle Detective

Find missing angle measures.

GRADE 4 • TEKS 4.7

4.7 "Geometry and measurement. The student applies mathematical process standards to solve problems involving angles less than or equal to 180 degrees..."

NAME _____

DATE _____

ANGLE PARTS

A full circle measures 360 degrees. Adjacent angles that do not overlap can be added, and you can subtract a known part from the total to find a missing angle.

WORKED EXAMPLE

Two adjacent angles make 128 degrees. One angle is 53 degrees. Find x .

1. Write: $53 + x = 128$.
2. Subtract 53 from 128.
3. $x = 75$.

Answer: 75 degrees

PRACTICE 5 problems

- 1** A circle is split into 4 equal parts. What is the measure of 1 part?

ANSWER _____

- 2** An angle cuts $142/360$ of a circle. What is its measure?

ANSWER _____

- 3** Two adjacent angles total 117 degrees. One angle is 46 degrees. Find x .

ANSWER _____

- 4** A straight angle is 180 degrees. One part is 109 degrees. Find x .

ANSWER _____

- 5** A ray starts at 0 on a protractor and crosses the 37-degree mark. What is the angle measure?

ANSWER _____

APPLY IT Show your work

- 1** At robotics club, two adjacent turns of a robot arm total 154 degrees. One turn is 68 degrees. What is the other turn?

WORK SPACE

ANSWER _____

- 2** At an arcade, a prize-wheel section and the section beside it make a straight angle. One section measures 132 degrees. What is the other section's measure?

WORK SPACE

ANSWER _____

CHALLENGE One step up

CHALLENGE

Three non-overlapping adjacent angles form a straight angle. Two angles measure 47 degrees and 66 degrees. Find the third angle. Explain with an equation.

PART 1 • PRACTICE

#	PROBLEM	ANSWER
1	A circle is split into 4 equal parts. What is the measure of 1 part?	90 degrees
2	An angle cuts $142/360$ of a circle. What is its measure?	142 degrees
3	Two adjacent angles total 117 degrees. One angle is 46 degrees. Find x.	71 degrees
4	A straight angle is 180 degrees. One part is 109 degrees. Find x.	71 degrees
5	A ray starts at 0 on a protractor and crosses the 37-degree mark. What is the angle measure?	37 degrees

PART 2 • APPLY IT

1. **86 degrees** Subtract the known turn from the total: $154 - 68 = 86$.
2. **48 degrees** A straight angle is 180 degrees. Subtract: $180 - 132 = 48$.

CHALLENGE

67 degrees; $47 + 66 + 67 = 180$.

Accept degree symbols or the word degrees. For the challenge, accept an equivalent equation that shows the three angles total 180 degrees.