LESSON MAKER PRO

# Angle Parts Puzzle

*Add and subtract to find missing angle measures.*

**GRADE 4 · NY-4.MD.7**

**NY-4.MD.7** "Recognize angle measure as additive. When an angle is decomposed into non-overlapping parts, the angle measure of the whole is the sum of the angle measures of the parts..."

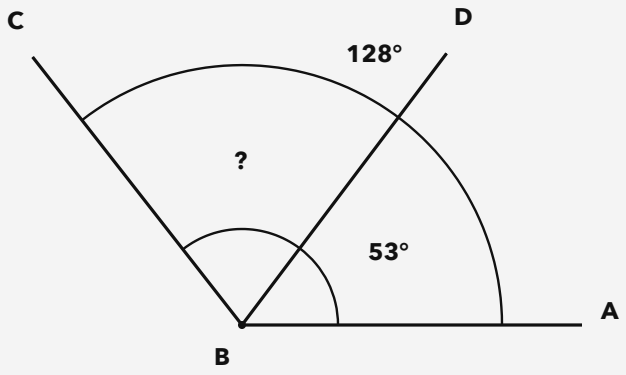
NAME _____ DATE _____

## ADD ANGLE PARTS

When smaller angles do not overlap, their measures add to make the whole angle. To find a missing part, subtract the known part or parts from the whole.

### WORKED EXAMPLE

Ray BD splits angle ABC. Angle ABD measures 53° and the whole angle measures 128°. Find angle DBC.




1. Whole angle = 128°.
2. Known part = 53°.
3. 128° - 53° = 75°.

**Answer: 75°**

## PRACTICE 4 problems

**1** A 97° angle is split into a 42° angle and one other angle. Find the other angle.

**ANSWER** _____

**2** Three non-overlapping angles measure 28°, 36°, and 19°. Find the measure of the whole angle.

**ANSWER** _____

**3** A straight angle measures 180°. One part measures 65°. Find the other part.

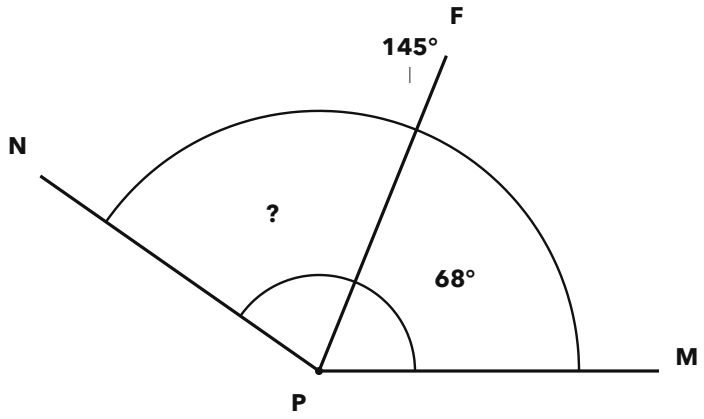
**ANSWER** _____

**4** A 110° angle is split into angles of 41°, 27°, and one other angle. Find the missing angle.

**ANSWER** _____

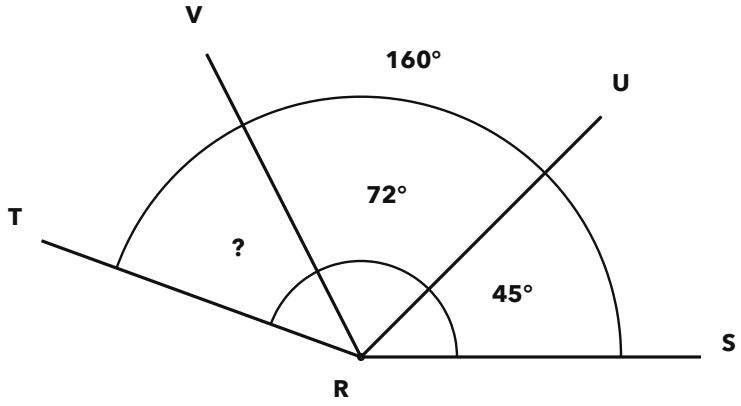
## APPLY IT Show your work

**1** At art club, Imani makes angle MPN with two cardboard panels. Fold PF divides the 145° angle into angle MPF of 68° and angle FPN. Find angle FPN.




**ANSWER** _____

**2** A robot makes the 160° turn SRT shown. Rays RU and RV split it into angles SRU of 45°, URV of 72°, and VRT. Find angle VRT.




**ANSWER** _____

## CHALLENGE One step up

A straight angle is split into four non-overlapping parts. Two parts measure 38° and 46°. The other two parts are equal. Find each equal part. Explain with an addition equation.

WORK SPACE AND ANSWER

**ANSWER KEY**

# Angle Parts Puzzle

**GRADE 4 · NY-4.MD.7**

## PART 1 · PRACTICE

| # | PROBLEM | ANSWER |
|---|---|---|
| 1 | A 97° angle is split into a 42° angle and one other angle. Find the other angle. | **55°** |
| 2 | Three non-overlapping angles measure 28°, 36°, and 19°. Find the measure of the whole angle. | **83°** |
| 3 | A straight angle measures 180°. One part measures 65°. Find the other part. | **115°** |
| 4 | A 110° angle is split into angles of 41°, 27°, and one other angle. Find the missing angle. | **42°** |

## PART 2 · APPLY IT

1. **77°** Subtract the known part from the whole angle: 145° - 68° = 77°.
2. **43°** Add the known parts, 45° + 72° = 117°. Then subtract: 160° - 117° = 43°.

## CHALLENGE

**48° each; 38° + 46° + 48° + 48° = 180°.**

Accept equivalent addition or subtraction equations. For the challenge, accept a clear explanation that the two equal parts total 96° and each is 48°.