

Angle Detective

Read, estimate, and combine angle measures.

GRADE 4 • MA.4.GR.1.2

MA.4.GR.1.2 "Estimate angle measures. Using a protractor, measure angles in whole-number degrees and draw angles of specified measure in whole-number degrees. Demonstrate that angle measure is additive."

NAME _____

DATE _____

MEASURE AND ADD ANGLES

Use the protractor scale that starts at 0° on one ray of the angle. Estimate by comparing an angle to a right angle, which is 90° , or a straight angle, which is 180° . When smaller angles are side by side with no gaps or overlaps, add their measures to find the whole angle.

WORKED EXAMPLE

Two adjacent angles measure 53° and 71° . What is the measure of the whole angle?

1. Write $53^\circ + 71^\circ$.
2. Add the two angle measures.
3. $53^\circ + 71^\circ = 124^\circ$.

Answer: 124°

PRACTICE 6 problems

- 1** A protractor has one ray lined up with 0° . The other ray points to 38° on the scale that starts at 0° . What is the angle measure?

ANSWER _____

- 2** An angle looks almost like a right angle, but it is a little smaller. Estimate its measure.

ANSWER _____

- 3** Two adjacent angles measure 26° and 49° . What is the measure of the whole angle?

ANSWER _____

- 4** A whole angle measures 135° . One part measures 57° . What is the measure of the other part?

ANSWER _____

- 5** A protractor has one ray lined up with 0° . The other ray points to 112° on the scale that starts at 0° . What is the angle measure?

ANSWER _____

- 6** Three adjacent angles measure 19° , 34° , and 27° . What is the measure of the whole angle?

ANSWER _____

APPLY IT Show your work

- 1** At a soccer skills course, a player makes two side-by-side turns. The first turn measures 43° , and the second turn measures 72° . What is the measure of both turns together?

WORK SPACE

ANSWER _____

- 2** In a tablet drawing app, Jordan lines up one ray of an angle with 0° on a protractor. The other ray points to 139° on the scale that starts at 0° . What is the angle measure, and is it closer to 90° or 180° ?

WORK SPACE

ANSWER _____

CHALLENGE One step up

CHALLENGE

A turning angle in a video game measures 168° . It is split into three adjacent parts. The first part is 46° , and the second part is 59° . What is the measure of the third part? Explain how you know.

PART 1 • PRACTICE

#	PROBLEM	ANSWER
1	A protractor has one ray lined up with 0° . The other ray points to 38° on the scale that starts at 0° . What is the angle measure?	38°
2	An angle looks almost like a right angle, but it is a little smaller. Estimate its measure.	about 90°
3	Two adjacent angles measure 26° and 49° . What is the measure of the whole angle?	75°
4	A whole angle measures 135° . One part measures 57° . What is the measure of the other part?	78°
5	A protractor has one ray lined up with 0° . The other ray points to 112° on the scale that starts at 0° . What is the angle measure?	112°
6	Three adjacent angles measure 19° , 34° , and 27° . What is the measure of the whole angle?	80°

PART 2 • APPLY IT

- 115°** Add the measures of the adjacent turns. $43^\circ + 72^\circ = 115^\circ$.
- 139° , closer to 180°** Read 139° from the scale that begins at 0° . Since 139 is 41 away from 180 and 49 away from 90, it is closer to 180° .

CHALLENGE

63° ; $46^\circ + 59^\circ = 105^\circ$, and $168^\circ - 105^\circ = 63^\circ$.

Accept estimates such as about 90° for problem 2. For the challenge, accept an explanation that adds the known parts and subtracts their total from the whole angle.