

Angle Unit Quest

Measure turns by counting equal angle units.

GRADE 7 • 7.GSR.5.1

7.GSR.5.1 "Measure angles in whole nonstandard units."

NAME _____

DATE _____

COUNT EQUAL UNITS

Use the same small angle as your unit each time. Count how many unit angles fit exactly inside the larger angle, then write the count with the unit name.

WORKED EXAMPLE

A turn is built from 11 equal angle units. What is its measure?

1. Each repeated angle has the same size.
2. Count the angle units: 11.
3. Write the measure with its unit name.

Answer: 11 angle units

PRACTICE 6 problems

- 1** An angle contains 4 equal angle units. What is its measure?

ANSWER _____

- 2** An angle contains 6 equal angle units. What is its measure?

ANSWER _____

- 3** An angle is made by placing a 5-unit angle next to an 8-unit angle, with no overlap. What is the measure of the whole angle?

ANSWER _____

- 4** An angle measures 17 angle units. One part measures 7 angle units. What is the measure of the other part?

ANSWER _____

- 5** A design has 3 equal adjacent angles. Each angle measures 4 angle units. What is the measure from the first outer ray to the last outer ray?

ANSWER _____

- 6** An 18-unit angle is split into 2 equal adjacent angles. What is the measure of each smaller angle?

ANSWER _____

APPLY IT Show your work

- 1** A stage-light controller sweeps through a 16-unit angle. The sweep is split into 4 equal sections for a dance performance. How many angle units are in each section?

WORK SPACE

ANSWER _____

- 2** In a video game, a map pointer first turns through 9 angle units. It then turns through 6 more adjacent angle units in the same direction. What is the measure of the full turn?

WORK SPACE

ANSWER _____

CHALLENGE One step up

CHALLENGE

A game designer makes a 30-unit turn from 3 adjacent angles. The first angle is 8 units. The second angle is twice the first angle. What is the measure of the third angle? Explain how you know.

PART 1 • PRACTICE

#	PROBLEM	ANSWER
1	An angle contains 4 equal angle units. What is its measure?	4 angle units
2	An angle contains 6 equal angle units. What is its measure?	6 angle units
3	An angle is made by placing a 5-unit angle next to an 8-unit angle, with no overlap. What is the measure of the whole angle?	13 angle units
4	An angle measures 17 angle units. One part measures 7 angle units. What is the measure of the other part?	10 angle units
5	A design has 3 equal adjacent angles. Each angle measures 4 angle units. What is the measure from the first outer ray to the last outer ray?	12 angle units
6	An 18-unit angle is split into 2 equal adjacent angles. What is the measure of each smaller angle?	9 angle units

PART 2 • APPLY IT

1. **4 angle units** Divide the total measure by the number of equal sections. $16 / 4 = 4$ angle units per section.
2. **15 angle units** Add the measures of the adjacent angle parts. $9 + 6 = 15$ angle units.

CHALLENGE

6 angle units, because the second angle is 16 units and $30 - 8 - 16 = 6$.

Accept answers labeled in angle units. For the challenge, accept any clear explanation that finds the second angle as 16 units and subtracts both known parts from 30.