

Circle Angle Quest

Use 360 degrees to find equal angles and equal parts.

GRADE 4 • 4.GSR.7.2

4.GSR.7.2 "Measure angles in reference to a circle with the center at the common endpoint of two rays. Determine an angle's measure in relation to the 360 degrees in a circle through division or as a missing factor problem."

NAME _____

DATE _____

A FULL TURN

A full circle measures 360 degrees. When equal angles fill a circle and meet at the center, divide 360 by the number of angles to find one angle. To find how many equal angles fit in a circle, divide 360 by the measure of one angle.

WORKED EXAMPLE

A circle is split into 8 equal angles.
What is the measure of each angle?

1. A full circle measures 360 degrees.
2. Divide 360 by 8.
3. $360 / 8 = 45$.

Answer: 45 degrees

PRACTICE 6 problems

- 1** Six equal angles meet at the center of a circle. What is the measure of each angle?

ANSWER _____

- 2** An angle at the center of a circle measures 90 degrees. How many equal 90-degree angles make a full circle?

ANSWER _____

- 3** An angle at the center is $\frac{1}{4}$ of a full circle. What is its measure?

ANSWER _____

- 4** A circle is divided into 10 equal angles. What is the measure of each angle?

ANSWER _____

- 5** Three equal angles meet at the center of a circle and fill the circle. What is the measure of each angle?

ANSWER _____

- 6** A 24-degree angle at the center is repeated to fill a full circle. How many equal angles are there?

ANSWER _____

APPLY IT Show your work

- 1** At game night, Maya uses a spinner with 9 equal sections. The lines between the sections meet at the center. What is the angle measure of one section?

WORK SPACE

ANSWER _____

- 2** Leo programs a robot to turn 72 degrees each time. How many equal turns will the robot make to complete one full circle?

WORK SPACE

ANSWER _____

CHALLENGE One step up

CHALLENGE

A craft wheel is divided into equal sections. Five adjacent sections together make an angle of 100 degrees at the center. How many equal sections are in the whole wheel? Explain your reasoning.

PART 1 • PRACTICE

#	PROBLEM	ANSWER
1	Six equal angles meet at the center of a circle. What is the measure of each angle?	60 degrees
2	An angle at the center of a circle measures 90 degrees. How many equal 90-degree angles make a full circle?	4 angles
3	An angle at the center is $\frac{1}{4}$ of a full circle. What is its measure?	90 degrees
4	A circle is divided into 10 equal angles. What is the measure of each angle?	36 degrees
5	Three equal angles meet at the center of a circle and fill the circle. What is the measure of each angle?	120 degrees
6	A 24-degree angle at the center is repeated to fill a full circle. How many equal angles are there?	15 angles

PART 2 • APPLY IT

1. **40 degrees** A full spinner is 360 degrees. Divide 360 by 9 to get 40 degrees.
2. **5 turns** A full turn is 360 degrees. Divide 360 by 72 to get 5 turns.

CHALLENGE

18 sections. Each section measures $100 / 5 = 20$ degrees. Then $360 / 20 = 18$ sections.

Accept answers with or without the word degrees when the numerical measure is correct. For the challenge, accept any clear explanation that finds 20 degrees per section and then 18 total sections.