Grade 4 Angles

Classify, Draw, Measure

Two rays, a known right angle, wedges of a circle, and the 360-degree protractor

Inside

Two Rays, One Endpoint p. 3
what makes an angle

Right, Acute, or Obtuse p. 4
compare with a right angle

Draw Angles p. 5
dot grids

Wedges of a Circle p. 6
360 shared equally

Count the Wedges p. 7
wedges times degrees

Unit Angles p. 8
how many fit

Read the 360 Protractor p. 9
one ray on zero

Measure on the Protractor p. 10
check the reading

Use Your Own Protractor p. 11
a real protractor

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pizza and spinners

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all of it together

Break the circle into wedges, then count them to measure an angle.

A Strategy Spotlight with a worked example opens every page.

Traced to Georgia's K-12 Mathematics Standards. The teacher page lists every code. Answer keys follow the student pages. Print at 100% so the protractors are true size.

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TOUCHSTONE STANDARDS | Teacher Page: Standards and How to Use

Georgia's K-12 Mathematics Standards (2021, effective SY2023-24) covered

Standard 4.GSR.7: Investigate the concepts of angles and angle measurement to estimate and measure angles.

Code	Element (GaDOE wording)	Pages
4.GSR.7.1	Recognize angles as geometric shapes formed when two rays share a common endpoint. Draw right, acute, and obtuse angles based on the relationship of the angle measure to 90 degrees.	3 to 5, 11, 13, 14
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.	6 to 14

GaDOE notes we follow (4.GSR.7.1): "Students at this grade level are not expected to know that straight lines represent 180° angles." "Students at this grade level should determine whether an angle is acute, obtuse, or right using a known right angle." "Students should be able to represent angle measures using the degree symbol."

(4.GSR.7.2): "Angle measurement should be introduced with non-standard tools such as pattern blocks, unit angles, and/or wedges prior to introducing protractors. 360-degree protractors would make an explicit connection to the degrees of a circle and builds conceptual understanding of angles." "Students can but are not expected to use 180° protractors."

Limits we hold to: every printed measure is a multiple of 5 from 10 to 170 degrees (no straight angle, nothing over 180); angles classified by eye are at least 15 degrees from 90; wedge circles have 3, 4, 6, 8, 9, or 12 wedges; no supplementary, complementary, or vertical angle problems (Grade 7).

Page map

Page	Section	Items	Code	Focus
3	Two Rays, One Endpoint	5	4.GSR.7.1	angle or not; vertex
4	Right, Acute, or Obtuse	8	4.GSR.7.1	known right angle
5	Draw Angles	6	4.GSR.7.1	dot grids
6	Wedges of a Circle	4	4.GSR.7.2	360 ÷ n
7	Count the Wedges	3	4.GSR.7.2	wedges × degrees
8	Unit Angles	3	4.GSR.7.2	unit angles
9	Read the 360 Protractor	4	4.GSR.7.2	read, estimate
10	Measure on the Protractor	4	4.GSR.7.2	check a reading
11	Use Your Own Protractor	4	4.GSR.7.1, 7.2	real protractor
12	Angle Stories	2	4.GSR.7.2	word problems
13	Angle Code	5	4.GSR.7.1, 7.2	self-checking
14	Mixed Review	4	4.GSR.7.1, 7.2	review

Our Approach: Part-Whole Thinking, and Teaching notes

An angle is two rays that share an endpoint, and its measure is a count of equal pieces of a circle: break 360 degrees into wedges, count the wedges or unit angles an angle covers, multiply to put them back together, then read a protractor, which is a circle already cut into 5-degree pieces. Model the Strategy Spotlight out loud first, then let students try.

Wedges and unit angles (pages 6 to 8) come before the first protractor (page 9). The printed protractors (pages 9, 10, 14) are 360-degree protractors, one scale, 0 on the right, counterclockwise, true size (tick ring radius 1.4 inches), with one ray of each angle on the 0 line. Page 11 uses the student's own protractor; a 180-degree protractor works, and the key accepts 5 degrees either way. Students write the degree symbol in every measure box; page 6 boxes hold the missing number of a number sentence.

How to use

Work in order, 15 to 20 minutes a page: angles and the known right angle (3 to 5), wedges and unit angles (6 to 8), the printed protractor (9, 10), a real protractor (11), stories, the code page, then Mixed Review. Keys are pages 15 to 26; story keys show the worked steps. Print at 100% (actual size, not Fit to Page) so the protractors are true size; the bars below should measure 2 inches and 10 centimeters.

Check bars: 2 inches at 100%

10 centimeters at 100%

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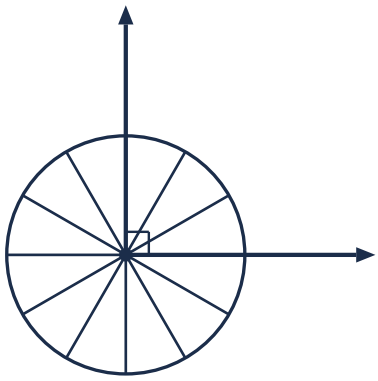
Count the Wedges

Name _____

Count the wedges inside each angle, then write its measure with the degree symbol.

Strategy Spotlight: Wedges Times Degrees
Think: 5 wedges of 30° inside the angle is 5 × 30 = 150°.

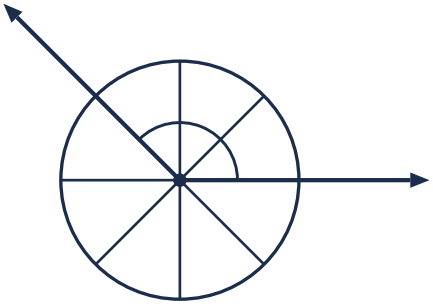
1



Each wedge of this circle measures 30°.

The angle measures ☐

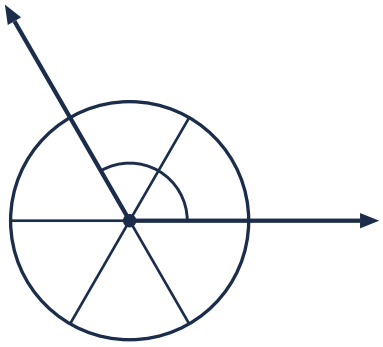
2



Each wedge of this circle measures 45°.

The angle measures ☐

3



Each wedge of this circle measures 60°.

The angle measures ☐

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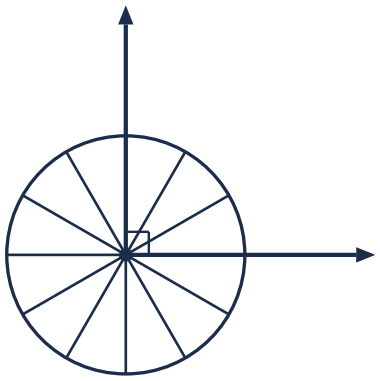
Answer Key: Count the Wedges

Name _____

Count the wedges inside each angle, then write its measure with the degree symbol.

Strategy Spotlight: Wedges Times Degrees
Think: 5 wedges of 30° inside the angle is 5 × 30 = 150°.

1

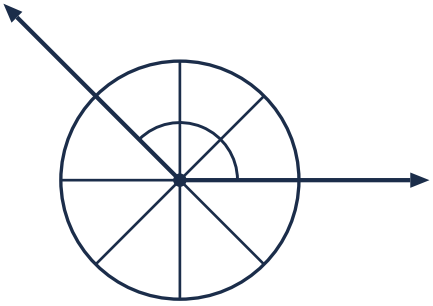


Each wedge of this circle measures 30°.

The angle measures **90°**

3 × 30 = 90

2

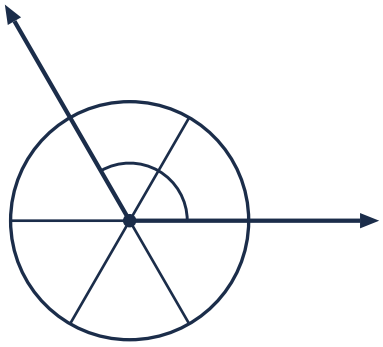


Each wedge of this circle measures 45°.

The angle measures **135°**

3 × 45 = 135

3



Each wedge of this circle measures 60°.

The angle measures **120°**

2 × 60 = 120

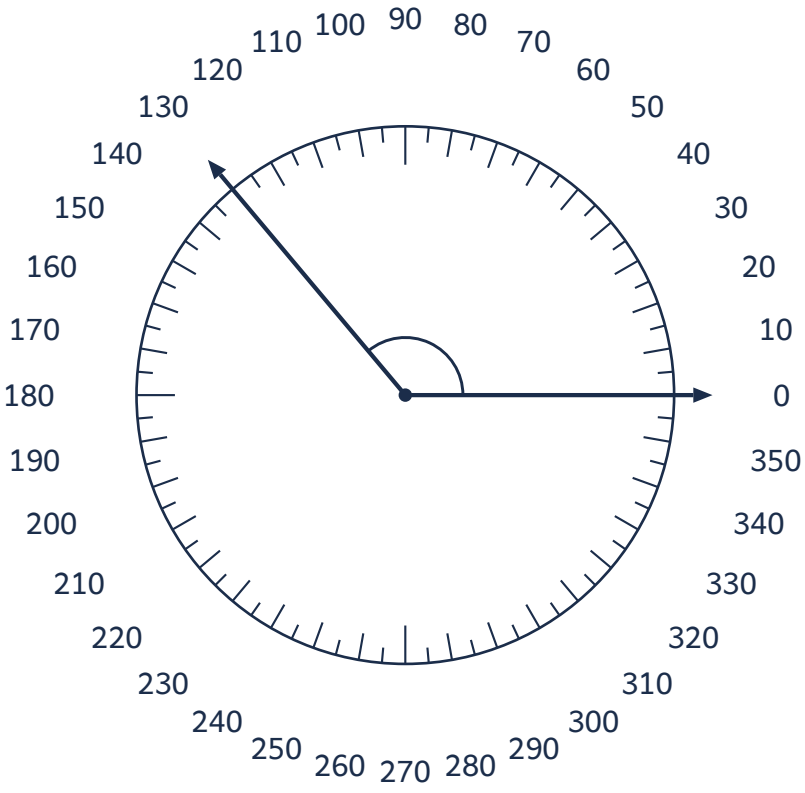
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Read the 360 Protractor

Name _____ Print at 100% (actual size)

Estimate, then read the protractor, writing the measure with the degree symbol.

Strategy Spotlight: Start at Zero
Think: one ray sits on 0, so read the number the other ray crosses: 70.



1. Estimate first. The angle is closest to

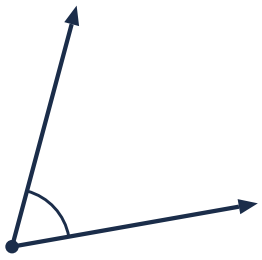
   A 45°

   B 90°

   C 135°

2. Now read the protractor. The angle measures _____

3. Estimate. The angle is closest to

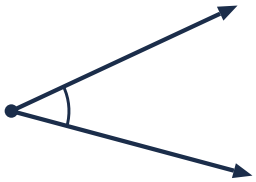


   A 30°

   B 60°

   C 90°

4. Estimate. The angle is closest to



   A 45°

   B 90°

   C 135°

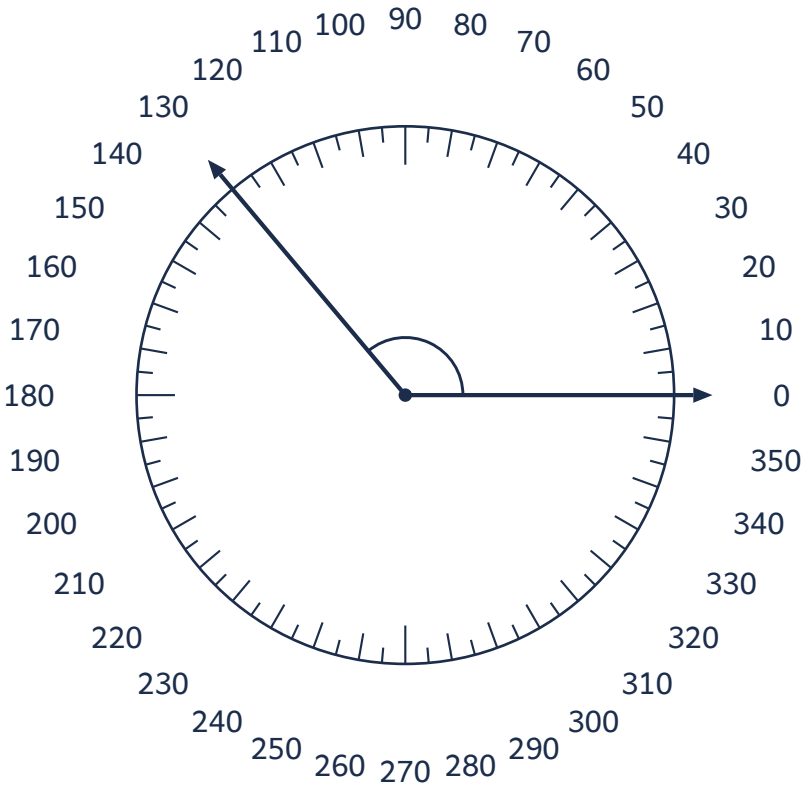
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Answer Key: Read the 360 Protractor

Name _____ Print at 100% (actual size)

Estimate, then read the protractor, writing the measure with the degree symbol.

Strategy Spotlight: Start at Zero
Think: one ray sits on 0, so read the number the other ray crosses: 70.



1. Estimate first. The angle is closest to

   A 45°

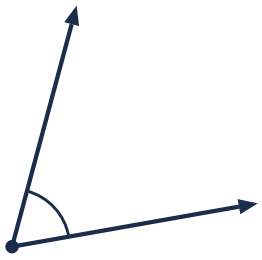
   B 90°

   C 135°

2. Now read the protractor. The angle measures

   130°

3. Estimate. The angle is closest to

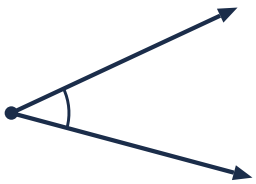


   A 30°

   B 60°

   C 90°

4. Estimate. The angle is closest to



   A 45°

   B 90°

   C 135°

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