

Angle Detectives

Use 90 degrees as your clue.

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."

NAME _____

DATE _____

ACUTE ANGLES

An acute angle is made by two rays with the same endpoint. Its measure is less than 90° .

A corner opened to 63° is acute.

OBTUSE ANGLES

An obtuse angle is made by two rays with the same endpoint. Its measure is greater than 90° .

A doorway opened to 128° is obtuse.

1 SORT _____ 8 items

Circle ACUTE or OBTUSE for each angle, then in Prove It, choose two item numbers and tell whether each measure is less than or greater than 90° .

1. Two rays make a 36° angle.

ACUTE

OBTUSE

2. An angle measures 154° .

ACUTE

OBTUSE

3. The opening between two rays is 101° .

ACUTE

OBTUSE

4. Angle: 72°

ACUTE

OBTUSE

5. The angle is 89° .

ACUTE

OBTUSE

6. Two rays share an endpoint. Their angle is 14° .

ACUTE

OBTUSE

7. Angle: 117°

ACUTE

OBTUSE

8. The opening is 165° .

ACUTE

OBTUSE

2 PROVE IT Explain your thinking

Pick two items from Part 1. For each one, tell how you knew where it belonged.

ITEM # _____ HOW I KNEW _____

ITEM # _____ HOW I KNEW _____

3 MAKE YOUR OWN One of each

Write one new acute angle example and one new obtuse angle example.

ACUTE _____

OBTUSE _____

CHALLENGE

Draw an angle that is neither acute nor obtuse, label its measure, and explain why it fits neither category.

PART 1 • SORT

#	ITEM	CATEGORY	WHY
1	Two rays make a 36° angle.	ACUTE	36° is less than 90° .
2	An angle measures 154° .	OBTUSE	154° is greater than 90° .
3	The opening between two rays is 101° .	OBTUSE	101° is greater than 90° .
4	Angle: 72°	ACUTE	72° is less than 90° .
5	The angle is 89° .	ACUTE	89° is less than 90° .
6	Two rays share an endpoint. Their angle is 14° .	ACUTE	14° is less than 90° .
7	Angle: 117°	OBTUSE	117° is greater than 90° .
8	The opening is 165° .	OBTUSE	165° is greater than 90° .

PART 2 • PROVE IT

Accept any explanation that names the deciding feature from the rule box for the chosen item.

PART 3 • MAKE YOUR OWN (SAMPLE ANSWERS)

- **ACUTE:** An angle measuring 28° .
- **OBTUSE:** An angle measuring 136° .

Challenge: A right angle labeled 90° . It is neither acute nor obtuse because it is exactly 90° .

For Prove It, students should name the item number and compare its measure with 90° . Accept different new examples when the acute measure is less than 90° and the obtuse measure is greater than 90° .