Angle Detectives

Measure, sort, and explain angles.

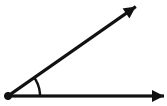
4.GM.2 "Recognize and measure attributes in real-world and mathematical situations using various tools. Measure angles in geometric figures and real-world objects with a protractor or angle ruler..."

NAME _____ DATE _____

ACUTE ANGLE

An acute angle measures less than 90°. Use a protractor or angle ruler to check its measure.

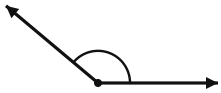
A 35° angle is acute.



OBTUSE ANGLE

An obtuse angle measures more than 90° but less than 180°. Use a protractor or angle ruler to check its measure.

A 140° angle is obtuse.



1 SORT

8 items

For each numbered figure, measure the angle with a protractor or angle ruler, then circle ACUTE or OBTUSE.

1.

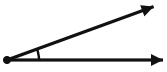


Figure 1

ACUTE OBTUSE

2.

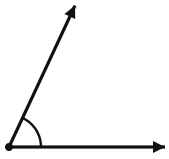


Figure 2

ACUTE OBTUSE

3.

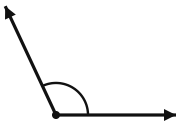


Figure 3

ACUTE **OBTUSE**

4.

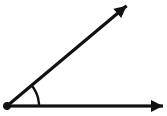


Figure 4

ACUTE **OBTUSE**

5.



Figure 5

ACUTE **OBTUSE**

6.

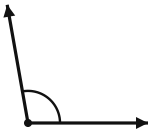


Figure 6

ACUTE **OBTUSE**

7.

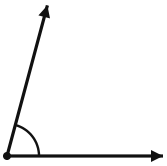


Figure 7

ACUTE **OBTUSE**

8.

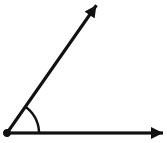


Figure 8

ACUTE **OBTUSE**

2 PROVE IT

Explain your thinking

Pick two figures and explain how you knew each category.

ITEM # _____ **HOW I KNEW** _____

ITEM # _____ **HOW I KNEW** _____

3 MAKE YOUR OWN

One of each

Write one new angle measure for each category and name its category.

ACUTE _____

OBTUSE _____

CHALLENGE

An angle measures 85°. Its measure increases by 20°. What is its new measure and category? Explain.

ANSWER KEY # Angle Detectives

PART 1 · SORT

#	ITEM	CATEGORY	WHY
1	Figure 1 (angle 20°)	**ACUTE**	20° is less than 90°.
2	Figure 2 (angle 65°)	**ACUTE**	65° is less than 90°.
3	Figure 3 (angle 115°)	**OBTUSE**	115° is more than 90° and less than 180°.
4	Figure 4 (angle 40°)	**ACUTE**	40° is less than 90°.
5	Figure 5 (angle 150°)	**OBTUSE**	150° is more than 90° and less than 180°.
6	Figure 6 (angle 100°)	**OBTUSE**	100° is more than 90° and less than 180°.
7	Figure 7 (angle 75°)	**ACUTE**	75° is less than 90°.
8	Figure 8 (angle 55°)	**ACUTE**	55° is less than 90°.

PART 2 · PROVE IT

Task: Pick two figures and explain how you knew each category.
Accept any explanation that names the deciding feature from the rule box for the chosen item.

PART 3 · MAKE YOUR OWN (SAMPLE ANSWERS)

- **ACUTE**: 30° is acute.
- **OBTUSE**: 125° is obtuse.

Challenge: The new measure is 105° because 85° + 20° = 105°. It is obtuse because 105° is more than 90° and less than 180°.

For Part 2, a student might explain that Figure 1 is acute because it measures 20°, which is less than 90°, and Figure 3 is obtuse because it measures 115°, which is more than 90°. Accept measurements close to the intended angles if printing affects accuracy.