

Angle Detectives

Sort triangles by the angles they have.

MA.5.GR.1.1 "Classify triangles or quadrilaterals into different categories based on shared defining attributes. Explain why a triangle or quadrilateral would or would not belong to a category."

NAME _____

DATE _____

RIGHT TRIANGLE

A right triangle has one right angle. A right angle measures 90° and is often marked with a small square.

A triangle with a square corner mark is a right triangle.

NOT A RIGHT TRIANGLE

A triangle that has no 90° angle is not a right triangle. Its angles may all be acute, or one angle may be obtuse.

A triangle with one obtuse angle is not a right triangle.

1 SORT _____ 8 items

Circle RIGHT or NOT RIGHT for each triangle, then choose two items and write why each triangle belongs in its category.

1. Angles: 90° , 45° , 45°

RIGHT

NOT RIGHT

2. Angles: 20° , 70° , 90°

RIGHT

NOT RIGHT

3. Angles: 40° , 65° , 75°

RIGHT

NOT RIGHT

4. Angles: 90° , 15° , 75°

RIGHT

NOT RIGHT

5. Angles: 110° , 35° , 35°

RIGHT

NOT RIGHT

6. Angles: 55° , 65° , 60°

RIGHT

NOT RIGHT

7. Angles: 90° , 80° , 10°

RIGHT

NOT RIGHT

8. Angles: 30° , 60° , 90°

RIGHT

NOT RIGHT

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 RIGHT triangle example and one new NOT RIGHT triangle example by listing the three angle measures for each triangle.

RIGHT _____

NOT RIGHT _____

CHALLENGE

Draw a right triangle, label all three angles so they add to 180° , and explain why it is a right triangle.

PART 1 • SORT

#	ITEM	CATEGORY	WHY
1	Angles: 90° , 45° , 45°	RIGHT	It has one 90° angle.
2	Angles: 20° , 70° , 90°	RIGHT	It has one 90° angle.
3	Angles: 40° , 65° , 75°	NOT RIGHT	None of its angles measures 90° .
4	Angles: 90° , 15° , 75°	RIGHT	It has one 90° angle.
5	Angles: 110° , 35° , 35°	NOT RIGHT	It has no 90° angle.
6	Angles: 55° , 65° , 60°	NOT RIGHT	None of its angles measures 90° .
7	Angles: 90° , 80° , 10°	RIGHT	It has one 90° angle.
8	Angles: 30° , 60° , 90°	RIGHT	It has one 90° angle.

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)

- **RIGHT:** Angles 90° , 25° , and 65° .
- **NOT RIGHT:** Angles 100° , 40° , and 40° .

Challenge: Draw a triangle labeled 90° , 45° , and 45° . It is a right triangle because one angle measures 90° .

For Part 2, accept explanations that identify a 90° angle for **RIGHT** or state that no angle is 90° for **NOT RIGHT**. Part 3 answers must have three angle measures that add to 180° and match the named category.