Objective: The students will complete assignment 17.4 Investigating Symmetry and will demonstrate their understanding with an accuracy rate of 70% or higher on Quiz-19 tomorrow.*

Standards   G-CO. Experiment with transformations in the plane.   Mathematics I

WHAT DO YOU NEED?

👉 A working Chromebook

👉 Math Notebook

👉 17.4 Investigating Symmetry

👉 TURN IN LATE OR MISSING WORK

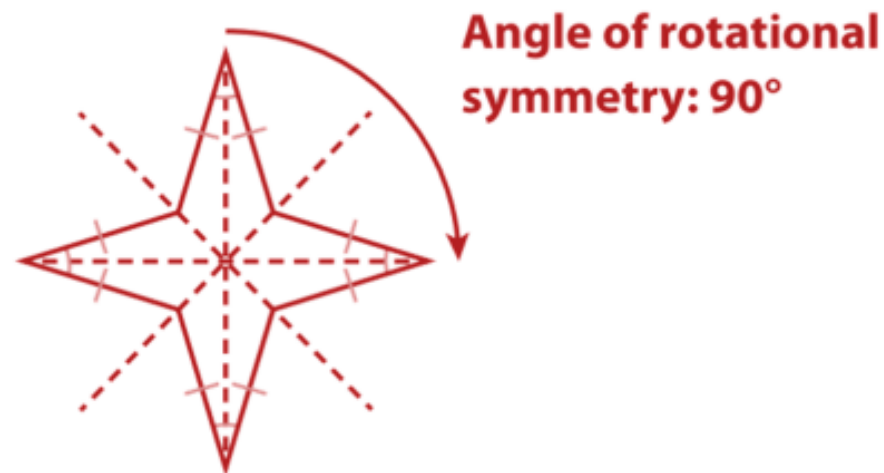*If accuracy of 70% or higher is not achieved, the student(s) will be required to retake it.

A figure has line symmetry if it can be reflected across a line so that the image maps onto the preimage. The line of symmetry divides the figure into two congruent halves.

$$\frac{1}{4} \text{ of } 360° = 90°.$$

Angle of rotational symmetry: 90°
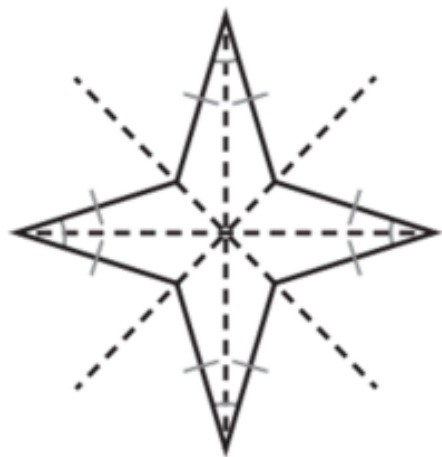
Number of lines of symmetry: 4
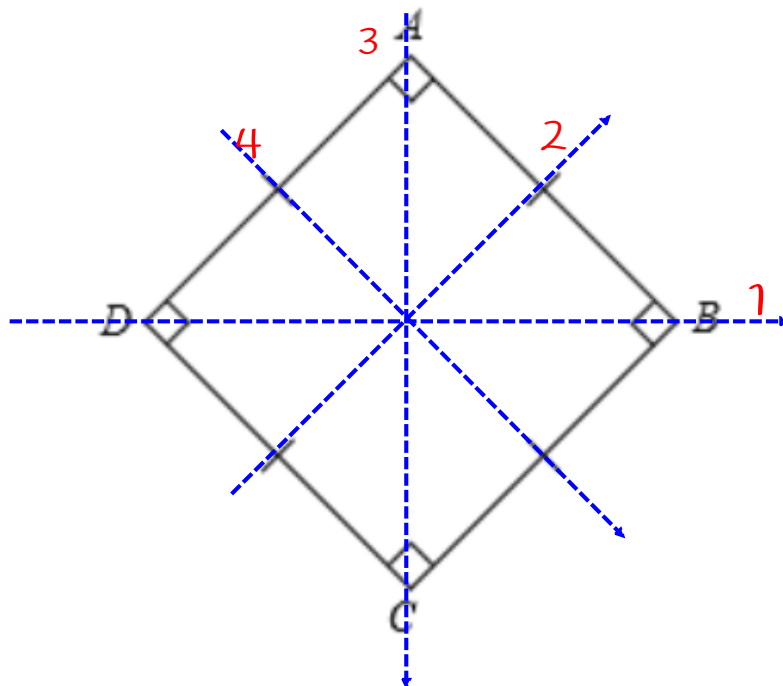
A figure has rotational symmetry if it can be rotated around a point by an angle greater than 0° and less than 360° so that the image maps onto the preimage.

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17.4 Investigating Symmetry

17.4

3 *A*
4
2
D   *B* 1

C

Part 1
Tell whether the figure has line symmetry, rotational symmetry, both types of symmetry, or no symmetry.

The figure has both types of ▼ symmetry.

Part 2
How many lines of symmetry does the figure have? Enter the comma-separated list of the angles of rotation less than 360°.
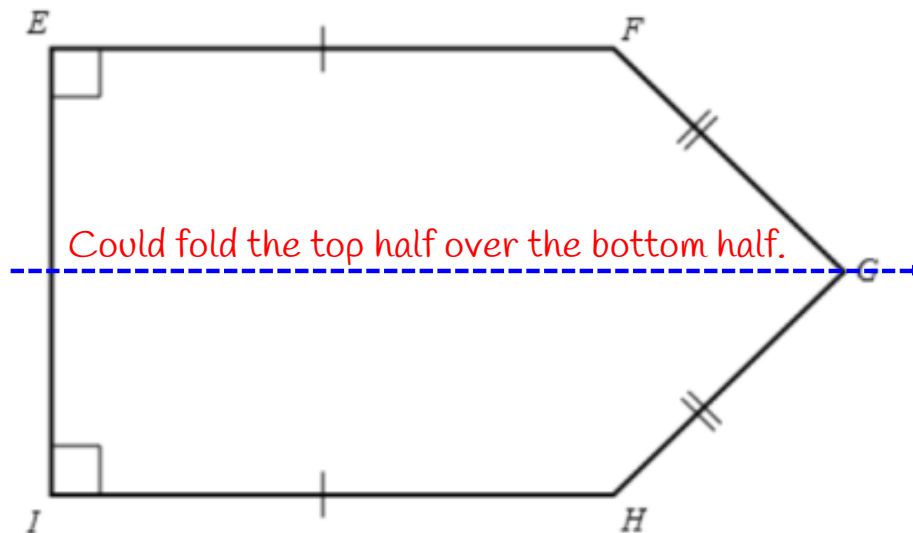
The figure has 4 lines of symmetry.

Don't forget to add Degree(°) symbol on the back of each number !!

The angles of rotation are 90°,180°,270°

$$\frac{1}{4} \text{ of } 360° = 90°.$$

The other angles of rotation for the figure are the multiples of 90° that are less than 360°.

2

E   F

Could fold the top half over the bottom half.

G

I   H

Part 1 ✔

Tell whether the figure has line symmetry, rotational symmetry, both types of symmetry, or no symmetry.
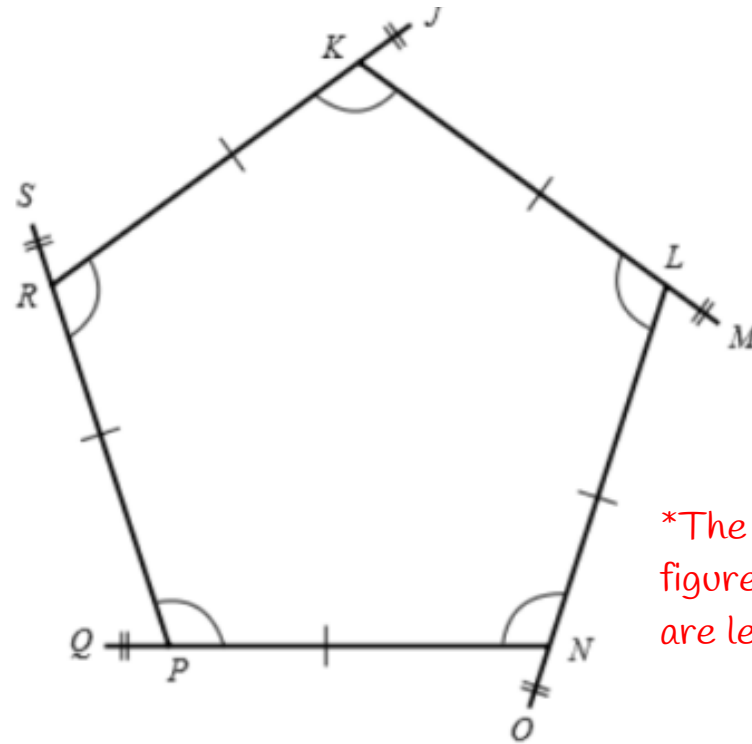
The figure has [line ▼] symmetry.

Part 2 ✔

How many lines of symmetry does the figure have?

The figure has [1] line(s) of symmetry.

3

$\frac{1}{5}$ of a circle, or 72°.

*The other angles of rotation for the figure are the multiples of 72° that are less than 360°.

Part 1
Tell whether the figure has line symmetry, rotational symmetry, both types of symmetry, or no symmetry.

The figure has rotational ▼ symmetry.
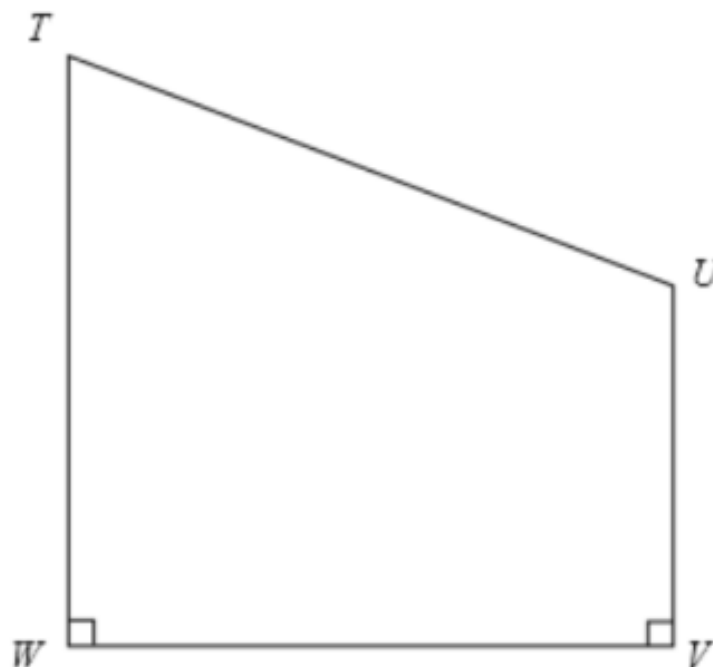
Part 2
Enter the comma-separated list of the angles of rotation less than 360°.

The angles of rotation are 72°,144°,216°,288° .

*Don't forget to add Degree(°) symbol on the back of each number !!

4

Part 1 ✔

Tell whether the figure has line symmetry, rotational symmetry, both types of symmetry, or no symmetry.
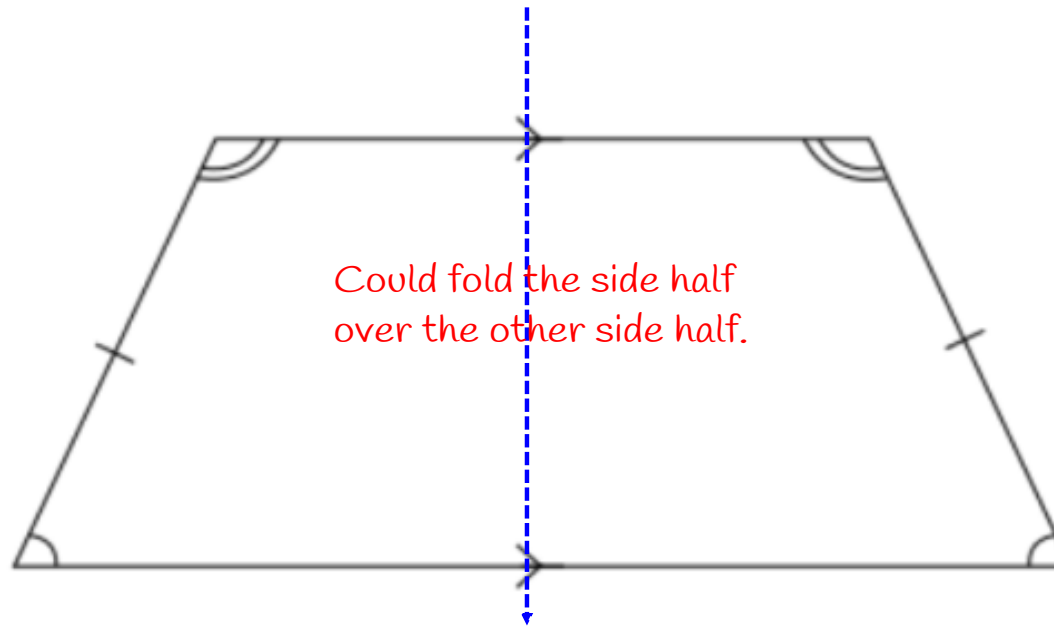
The figure has [no ▼] symmetry.

Part 2 ✔

How do you know?

There are [no lines ▼] about which the figure can be mirrored onto itself and [no angles ▼] of rotation that bring the figure onto itself.

5

Could fold the side half over the other side half.

How many lines of symmetry does the figure have? If the figure has no line symmetry, enter the number zero.

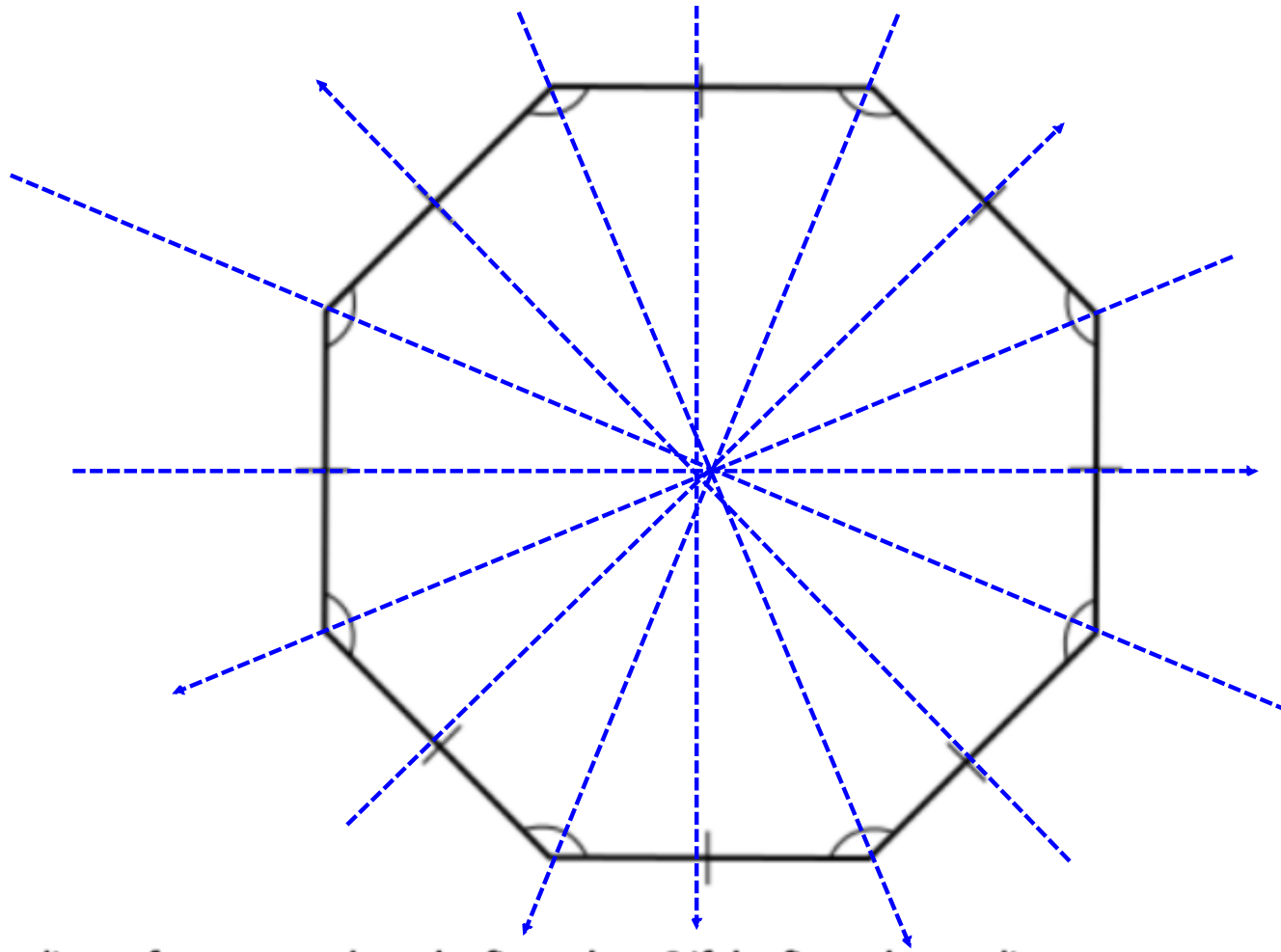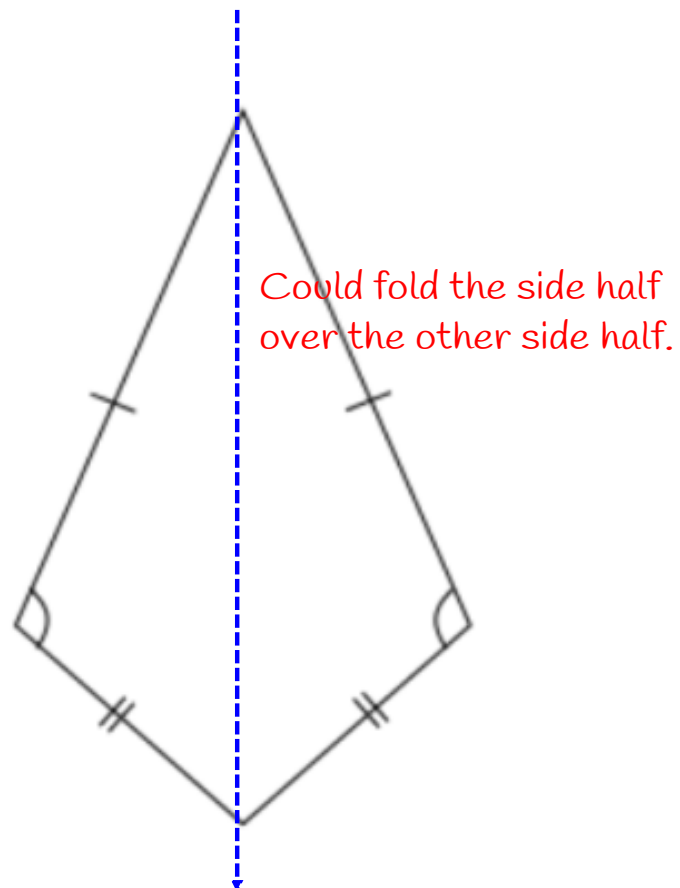The figure has [1] line(s) of symmetry.

6

How many lines of symmetry does the figure have? If the figure has no line symmetry, enter the number zero.

The figure has 8 line(s) of symmetry.

7

Could fold the side half over the other side half.

How many lines of symmetry does the figure have? If the figure has no line symmetry, enter the number zero.

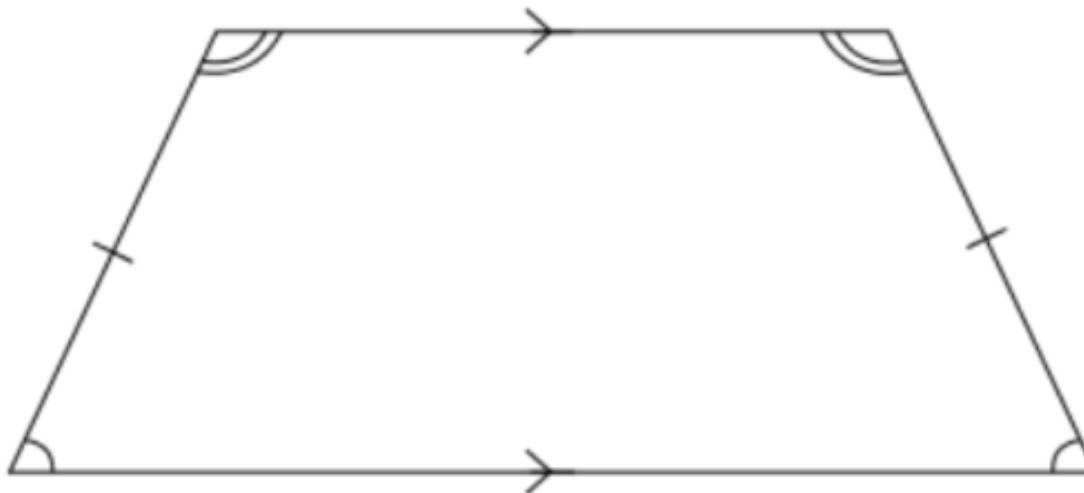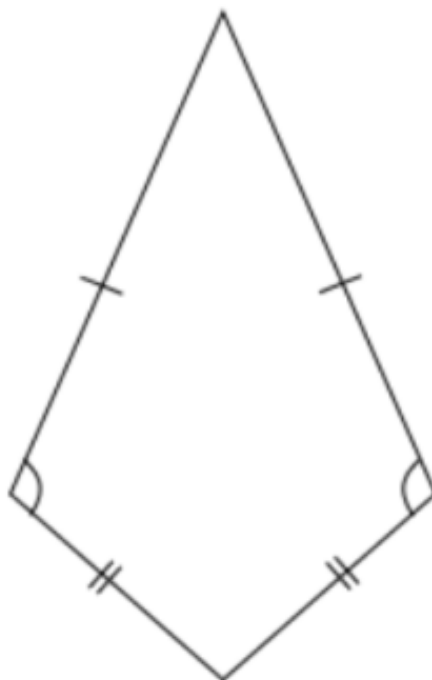The figure has `1` line(s) of symmetry.

8
___

List the angles of rotation, separated by commas, less than 360° if the figure has rotational symmetry. If the figure does not have rotational symmetry, enter the number zero.

The list of angles of rotation is 0 .

*A symmetry angle has to map the figure exactly back to itself. Consider the side lengths and angles of the figure. The figure shown has no angles of rotational symmetry.

9

List the angles of rotation, separated by commas, less than 360° if the figure has rotational symmetry. If the figure does not have rotational symmetry, enter the number zero.
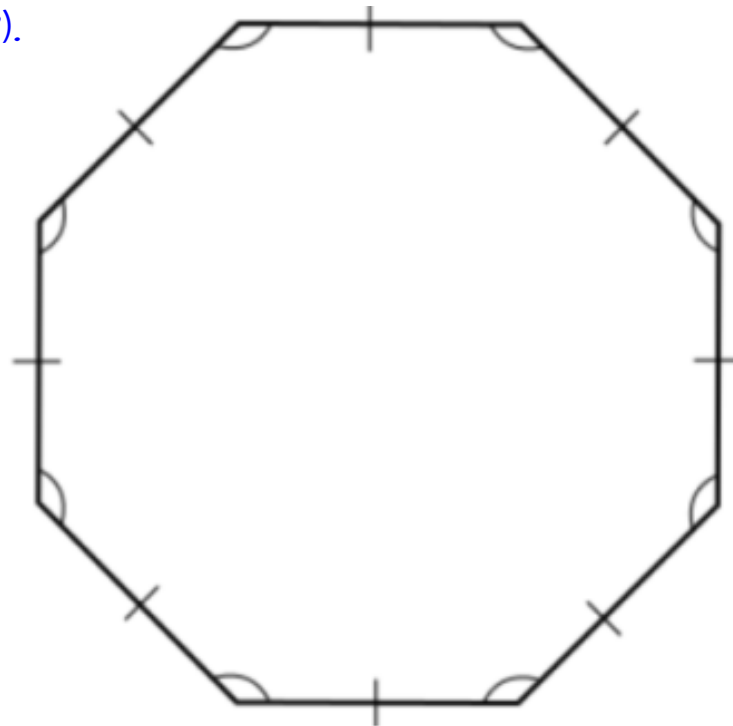
The list of angles of rotation is 0 .

*A symmetry angle has to map the figure exactly back to itself. Consider the side lengths and angles of the figure. The figure shown has no angles of rotational symmetry.

10     $$\frac{360}{8} = 45$$ *The other angles of rotation for the figure are the multiples of 45° that are less than 360°.

45° (1), 45° (2), 45° (3), 45° (4), 45° (5), 45° (6), 45° (7).

List the angles of rotation, separated by commas, less than 360° if the figure has rotational symmetry. If the figure does not have rotational symmetry, enter the number zero.

The list of angles of rotation is 45°, 90°, 135°, 180°, 225°, 270°, 315°

*Don't forget to add Degree(°) symbol on the back of each number !!

Never say,
"I can't"
Always say,
"I'll try"