Geometry Drawing Tools

CCSS: 7.G.A.2: Draw (freehand, with ruler and protractor, and with technology) geometric shapes with given conditions. Focus on constructing triangles from three measures of angles or sides, noticing when the conditions determine a unique triangle … .

Launch

SAMPLE SOLUTIONS ARE SHOWN BELOW.   MP6, MP8

A gift-shop owner sees the eight-sided sign she ordered from the local sign maker and says, "You got it wrong. I wanted an octagon like a stop sign."

Do you think the sign maker or the gift-shop owner was to blame for the wrong sign? Explain.

If the gift-shop owner asked for an eight-sided sign, then she is to blame for the wrong sign. Her description wasn't specific enough to expect an octagon that looks like a stop sign. But, if the gift-shop owner had asked for an octagon that looks like a stop sign, then the sign maker would be responsible for making the wrong sign.

Reflect If you ordered a sign for a shop, what would you do to make sure you received the correct sign?

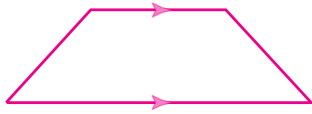Sample: I would give a detailed description, including measurements of sides and a sample drawing of my own.

Got It?

PART 1 Got It

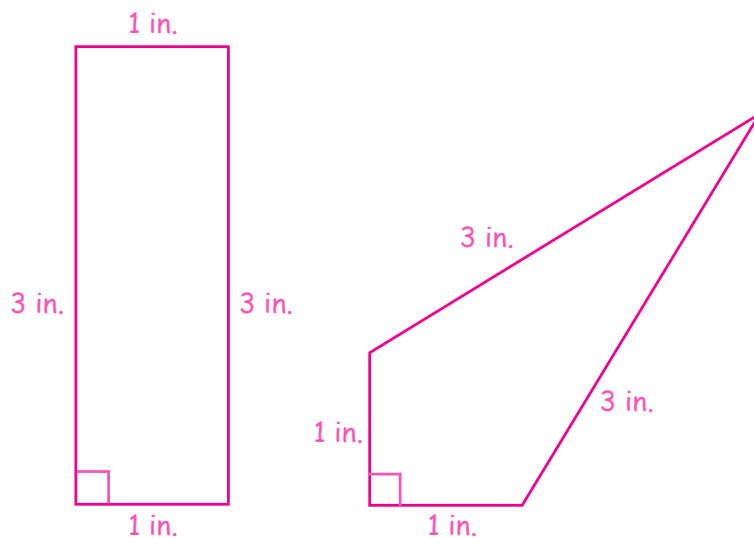Sketch a quadrilateral with exactly one pair of parallel sides.

Sample:

PART 2 Got It

Use a ruler and a protractor to draw a figure with two sides 1 in., two sides 3 in., and at least one right angle.
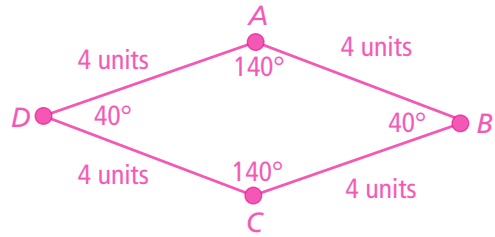
Sample:

1 in.

3 in.   3 in.

3 in.

3 in.

1 in.

1 in.   1 in.

PART 3 Got It

Draw a rhombus with side lengths of 4 units and angle measures 40°, 140°, 40°, and 140°.

Close and Check

Focus Question

Which geometry drawing tools are best for drawing which types of figures?

Sample: If you just need a sketch, you can draw freehand.

You can use a ruler and protractor to draw more precise figures.

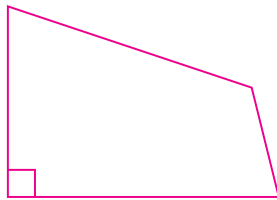You can use technology to draw all types of figures, but it

is especially useful for producing accurate and complicated

figures quickly.

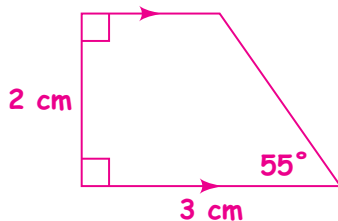## Do you know **HOW?**

1. Sketch a quadrilateral with one right angle and no parallel sides.

   Sample:

2. Use a ruler and a protractor to draw a trapezoid that has two right angles, two parallel sides, and one 55° angle. Let one side of the figure measure 3 cm and another side measure 2 cm.
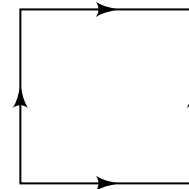
   Sample:

   2 cm

   55°

   3 cm

SAMPLE SOLUTIONS ARE SHOWN BELOW.

Do you **UNDERSTAND?**

3. **Writing** You try to quickly explain the difference between equilateral and isosceles triangles to your cousin. Which geometry drawing tools should you use? Explain.

   I only need a sketch to show

   the difference, so I can draw

   the triangles freehand.

4. **Error Analysis** An architect sketches a diagram for a square room. Does the sketch provide enough information to the builders? Explain.

   No. He needs to label

   dimensions and mark the

   corners as right angles.