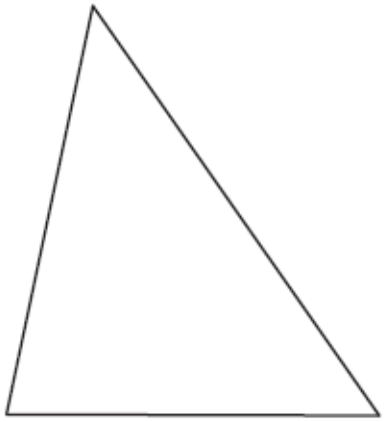
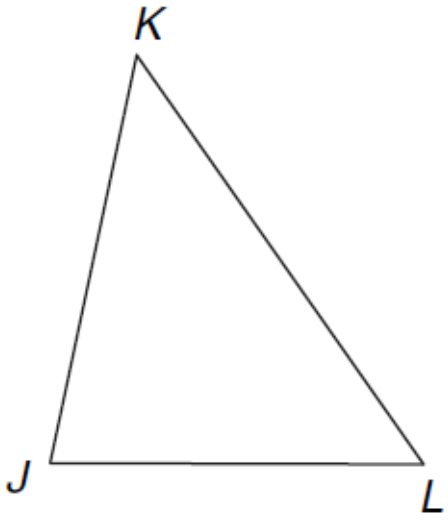
Lesson 8 Practice Questions
Lesson 2

Drawing Similar Polygons

1. Draw a triangle, similar to the one shown, that is smaller by a factor of 2.



Solution:
Step 1: Label the vertices.



Step 2: Measure each angle and side length. Record your findings.

Angle	Original Side Length
$\angle J = 80°$	$JK = 5.5$ cm
$\angle K = 45°$	$KL = 6.5$ cm
$\angle L = 55°$	$JL = 5$ cm

Step 3: Divide each of the side lengths by the given scale factor of 2.

Angle	Original Side Length	New Side Length in Reduction
$\angle J = 80°$	$JK = 5.5$ cm	$JK' = 2.75$ cm
$\angle K = 45°$	$KL = 6.5$ cm	$KL' = 3.25$ cm
$\angle L = 55°$	$JL = 5$ cm	$JL' = 2.5$ cm

Step 4: Draw one of the sides with its new measure.

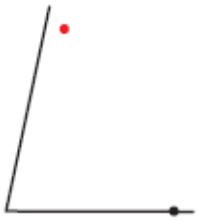
This example starts with side JK.

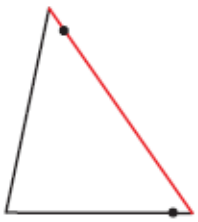
Step 5: Measure the angle at one end of the new side, and make a small mark.

Angle J' is 80°.

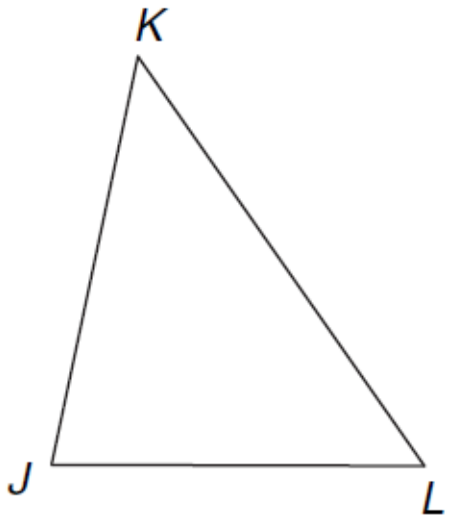
Step 6: Draw the next side, going through the small angle mark. This side length should correspond to the calculated length in step 3.

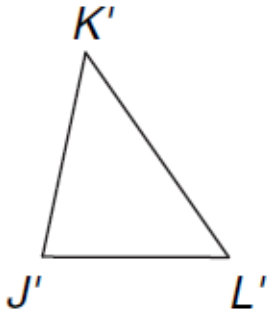
Step 7: Repeat Steps 5 and 6 until all sides are drawn.





Step 8: Measure the last side and measure the angle between the first and last sides.



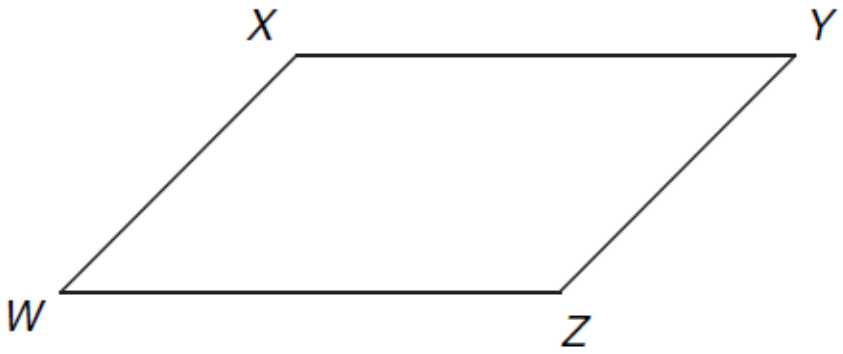


The last side measure 3.25 cm.
Angle K' measures 45°.

2. Draw a parallelogram, similar to the one shown, that is larger by a factor of 1.5.

Solution:

Step 1: Label the vertices.



Step 2: Measure each angle and side length. Record your findings.

Step 3: Multiply each of the side lengths by the given scale factor of 1.5.

Angle	Original Side Length	New Side Length in Enlargement
$\angle W = 45°$	$WX = 4.4$ cm	$WX' = 6.6$ cm
$\angle X = 135°$	$XY = 6.6$ cm	$XY' = 9.9$ cm
$\angle Y = 45°$	$YZ = 4.4$ cm	$YZ' = 6.6$ cm
$\angle Z = 135°$	$ZW = 6.6$ cm	$ZW' = 9.9$ cm

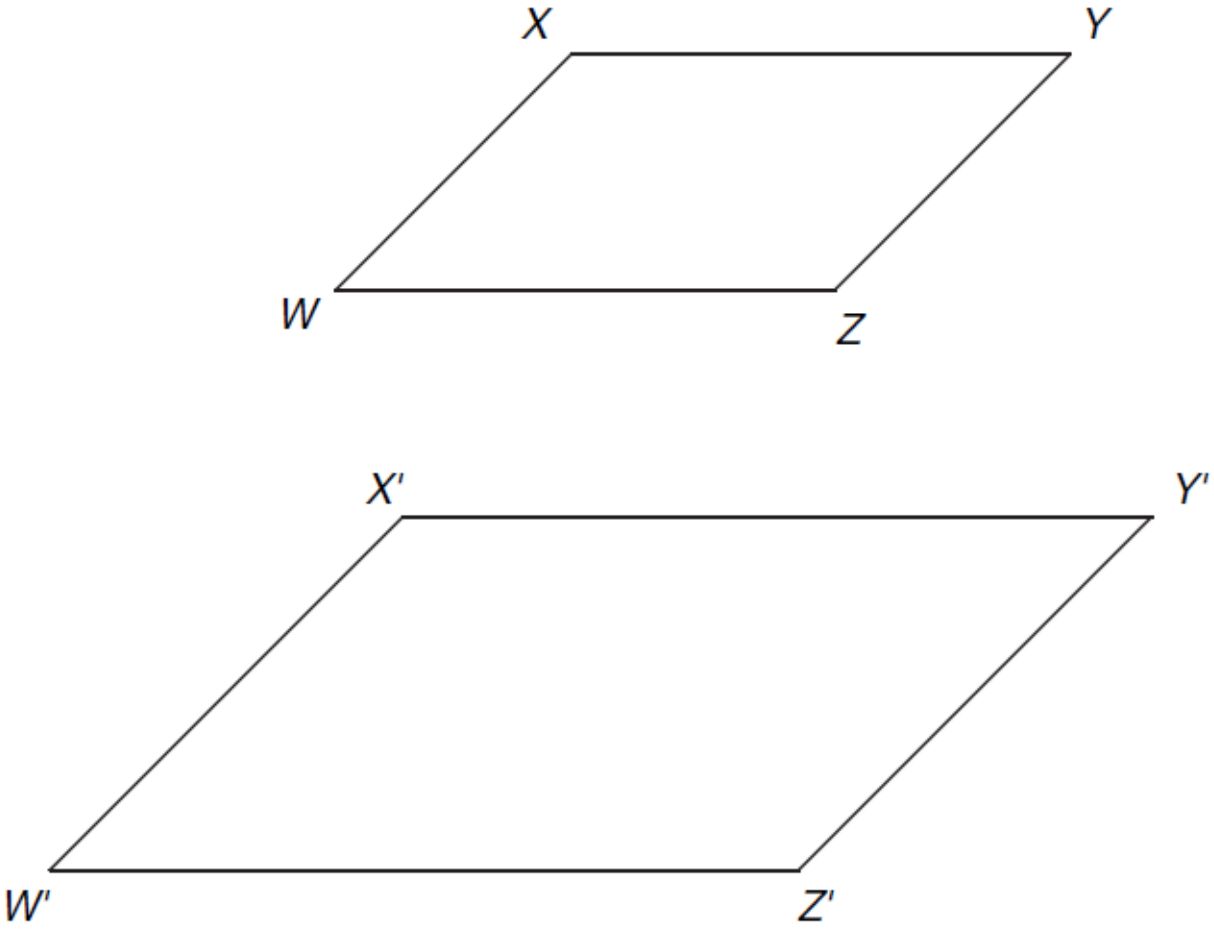
Step 4: Draw one of the sides with its new measure.

Step 5: Measure the angle at one end of the new side, and make a small mark.

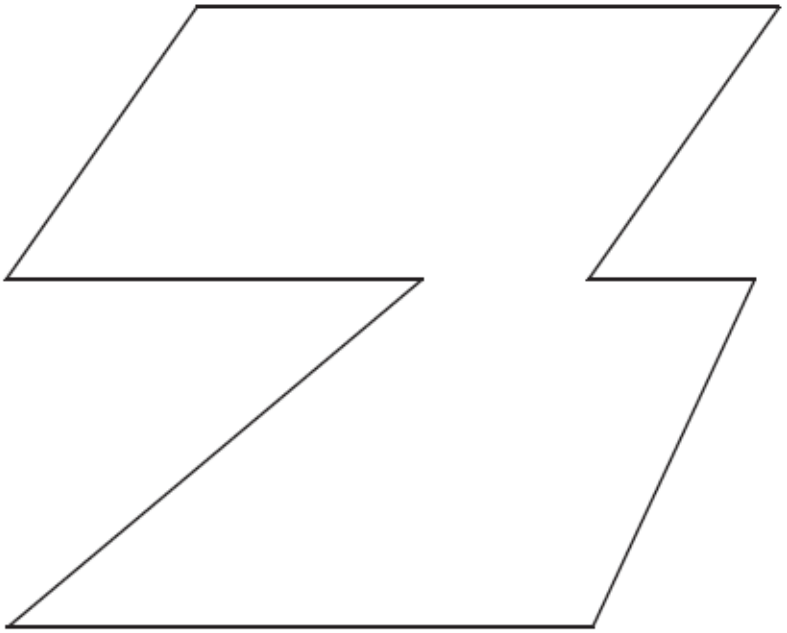
Step 6: Draw the next side, going through the small angle mark. This side length should correspond to the calculated length in step 3.

Step 7: Repeat Steps 5 and 6 until all sides are drawn.

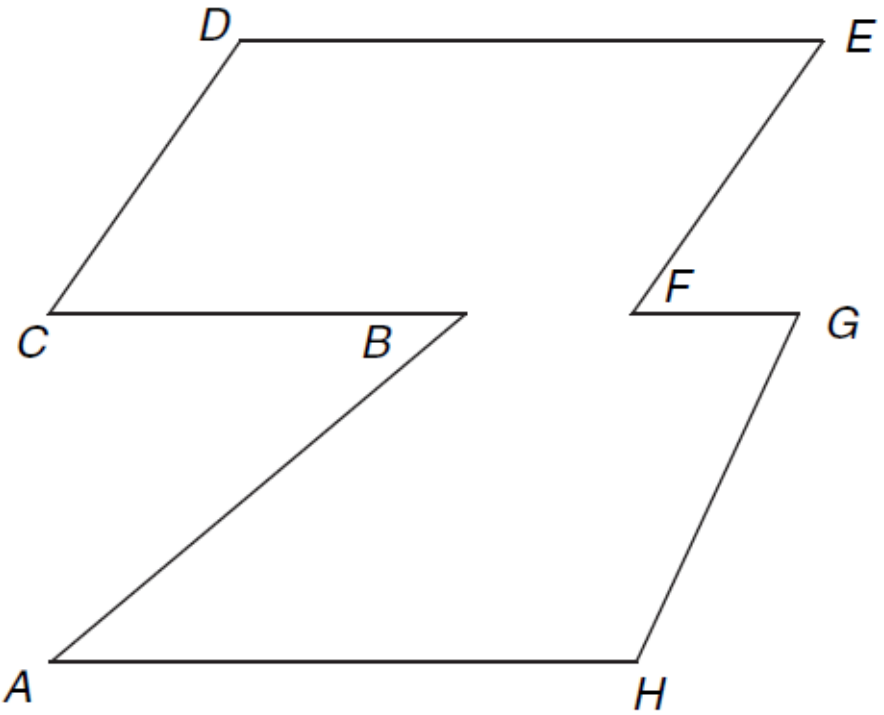
Step 8: Measure the last side and measure the angle between the first and last sides.



3. Draw a figure, similar to the one shown, that is an enlargement by a factor of 1.5.



Step 1: Label the vertices.



Step 2: Measure each angle and side length. Record your findings.
Step 3: Multiply each of the side lengths by the given scale factor of 1.5.

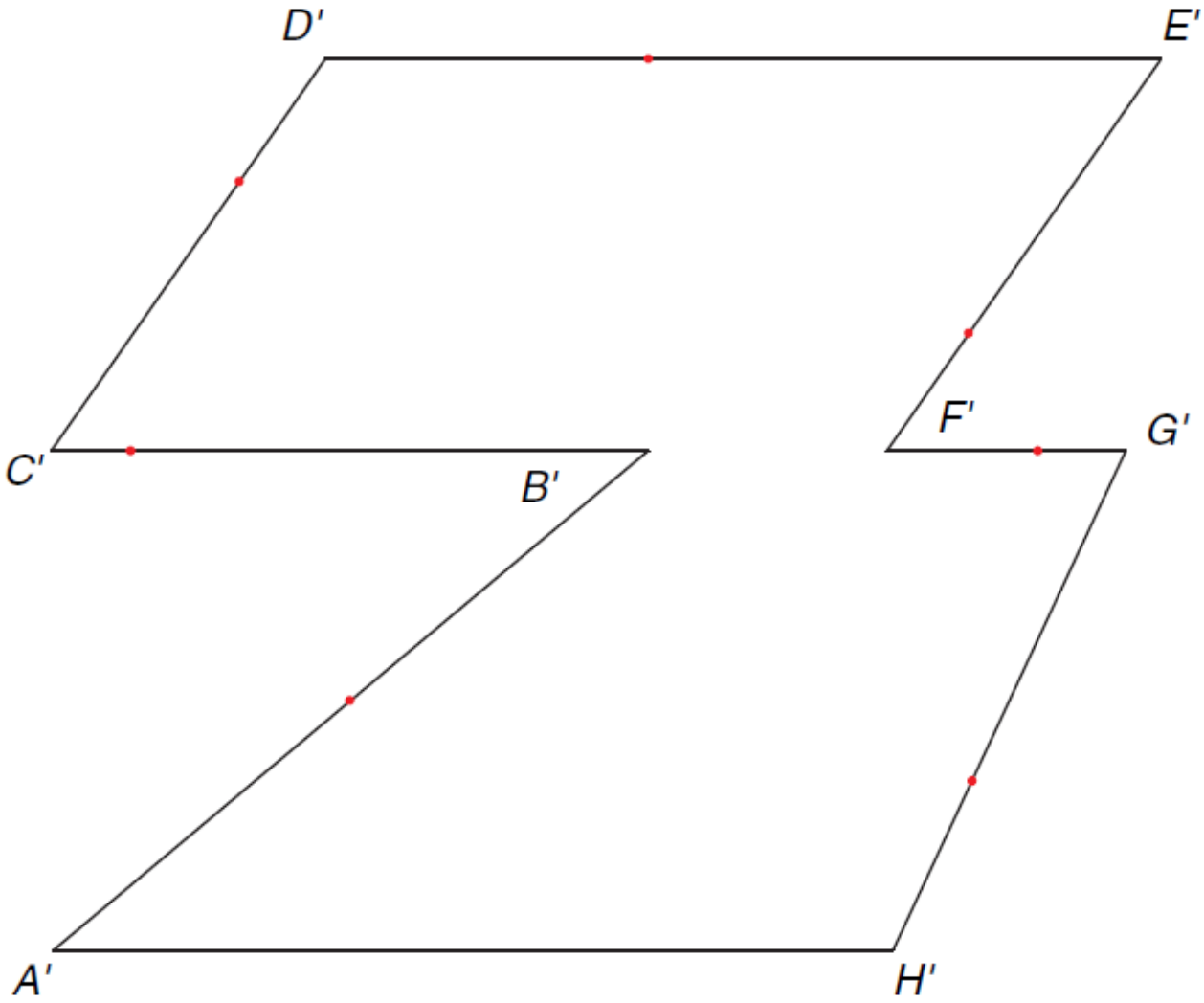
Angle	Original Side Length	New Side Length in Enlargement
$\angle A = 40°$	$AB = 7.2$ cm	$AB' = 10.8$ cm
$\angle B = 40°$	$BC = 5.5$ cm	$BC' = 8.25$ cm
$\angle C = 55°$	$CD = 4.4$ cm	$CD' = 6.6$ cm
$\angle D = 125°$	$DE = 7.7$ cm	$DE' = 11.55$ cm
$\angle E = 55°$	$EF = 4.4$ cm	$EF' = 6.6$ cm
$\angle F = 57°$	$FG = 2.2$ cm	$FG' = 3.3$ cm
$\angle G = 68°$	$GH = 5$ cm	$GH' = 7.5$ cm
$\angle H = 68°$	$HA = 7.8$ cm	$HA' = 11.7$ cm

Step 4: Draw one of the sides with its new measure.

Step 5: Measure the angle at one end of the new side, and make a small mark.

Step 6: Draw the next side, going through the small angle mark. This side length should correspond to the calculated length in Step 3.

Step 7: Repeat Steps 5 and 6 until all sides are drawn.



Step 8: Measure the last side and measure the angle between the first and last sides.