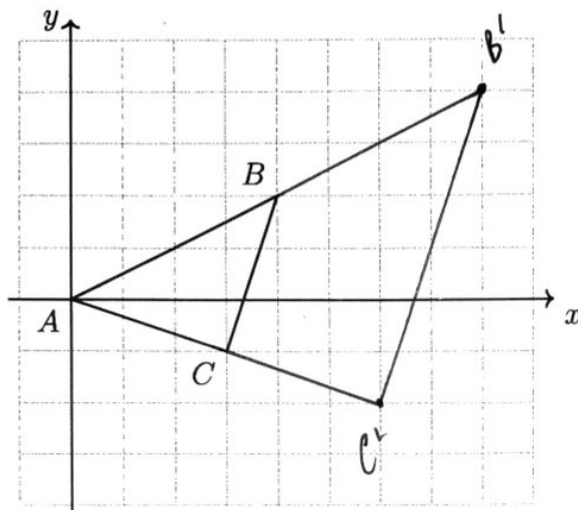


9.2 Classwork: Scale factor

CCSS.HSG.SRT.B.5

1. Dilate the triangle $ABC \rightarrow A'B'C'$ by a factor of $k = 2$ centered at the origin.



Complete the table of coordinate mappings.

$A(0,0) \rightarrow A'(0,0)$

$B(4,2) \rightarrow B'(8,4)$

$C(3,-1) \rightarrow C'(6,-2)$

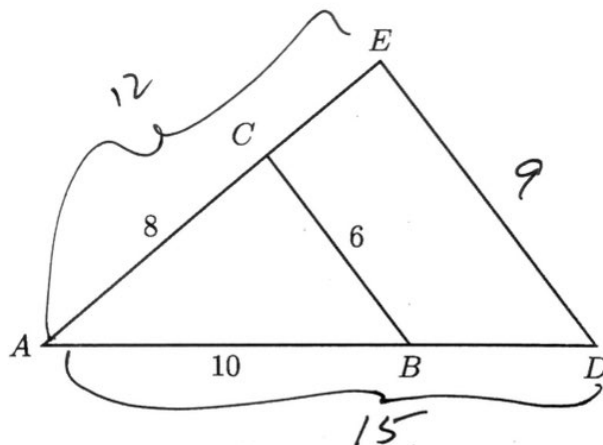
2. A dilation centered at A with a scale factor of $k = \frac{3}{2}$ maps $\triangle ABC \rightarrow \triangle ADE$.

Given $AB = 10$, $BC = 6$, and $AC = 8$.
Complete the table and mark the diagram.

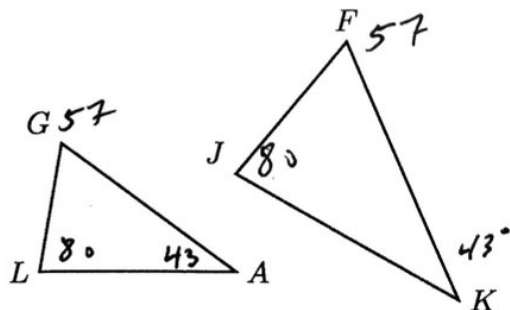
$AD = \frac{3}{2} \times 10 = 15$

$DE = \frac{3}{2} (6) = 9$

$AE = \frac{3}{2} (8) = 12$



3. Definition: $\triangle LGA \sim \triangle JFK$ if and only if all three corresponding angles are congruent.



$m\angle G + 80 + 43 = 180$
 $m\angle G = 57$

Are the given triangles similar? Yes

(a) $m\angle L = 80^\circ$, $m\angle A = 43^\circ$

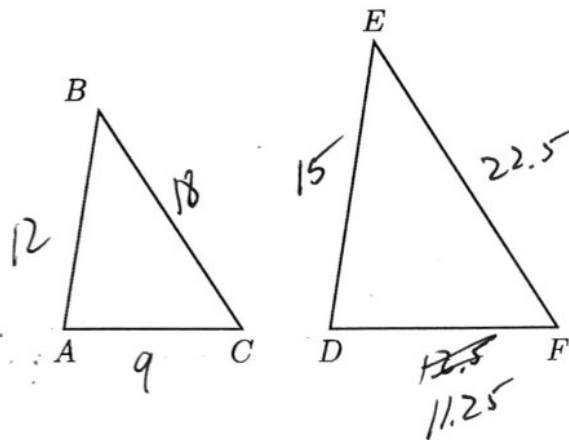
Find $m\angle G = \underline{57^\circ}$

(b) $m\angle J = 80^\circ$, $m\angle F = 57^\circ$

Find $m\angle K = \underline{43^\circ}$

Corresponding angles are \cong

4. Given $\triangle ABC \sim \triangle DEF$. Mark the legs $AB = 12$, $BC = 18$, $AC = 9$, and $DE = 15$.



Find the scale factor and missing sides.

$$(a) k = \frac{DE}{AB} = \frac{15}{12} = \frac{5}{4}$$

$$(b) EF = k \times BC = \frac{5}{4} (18) = 22.5$$

$$(c) DF = \frac{5}{4} (9) = 11.25$$

5. Triangle ABC is dilated with a scale factor of $k = 2.5$ centered at A , yielding $\triangle ADE$, as shown. Given $AB = 6$, $AC = 5$, and $DE = 17.5$.

Find AD , AE , and BC . Then find BD and CE .

$$AD = 2.5(6) = 15$$

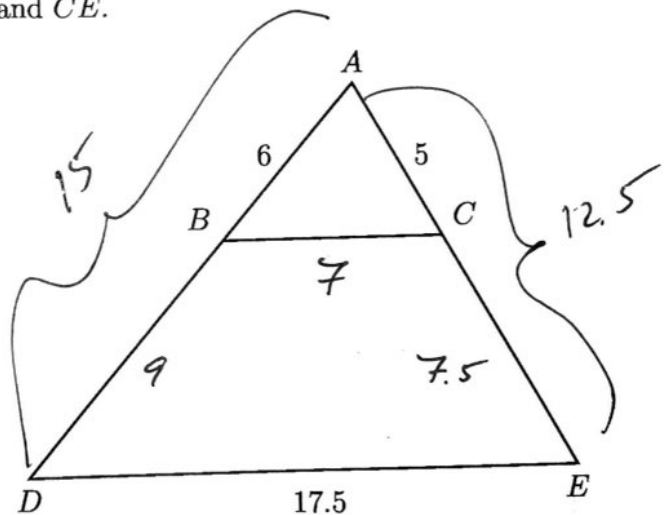
$$AE = 2.5(5) = 12.5$$

$$DE = 2.5(BC) = 17.5$$

$$BC = 7$$

$$BD = 15 - 6 = 9$$

$$CE = 12.5 - 5 = 7.5$$



6. A dilation centered at the origin and scale factor k maps $P(2, 5) \rightarrow P'(5, 12.5)$. Find k .

$$k = \frac{5}{2} = 2.5$$

or

$$k = \frac{12.5}{5} = 2\frac{1}{2}$$