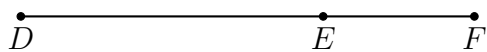
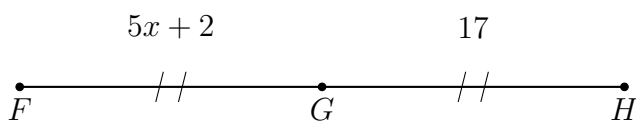


3.17 PreTest: Dilation and similarity

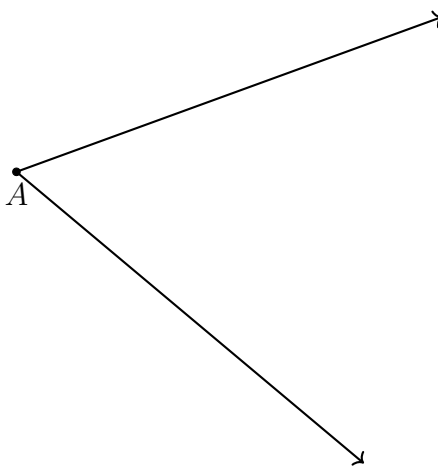
1. Given \overline{DEF} , $DE = 7$, and $EF = 2\frac{1}{3}$. Find DF .



2. Point G bisects \overline{FH} , with $FG = 5x + 2$, $GH = 17$. Find x .

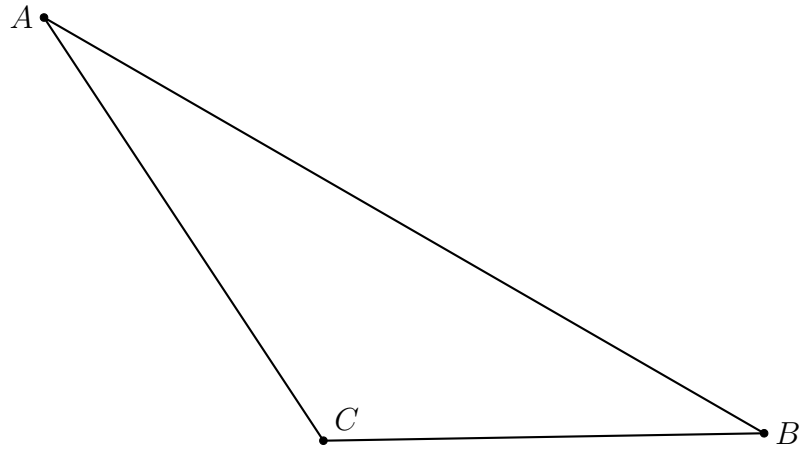


3. Bisect the given angle.

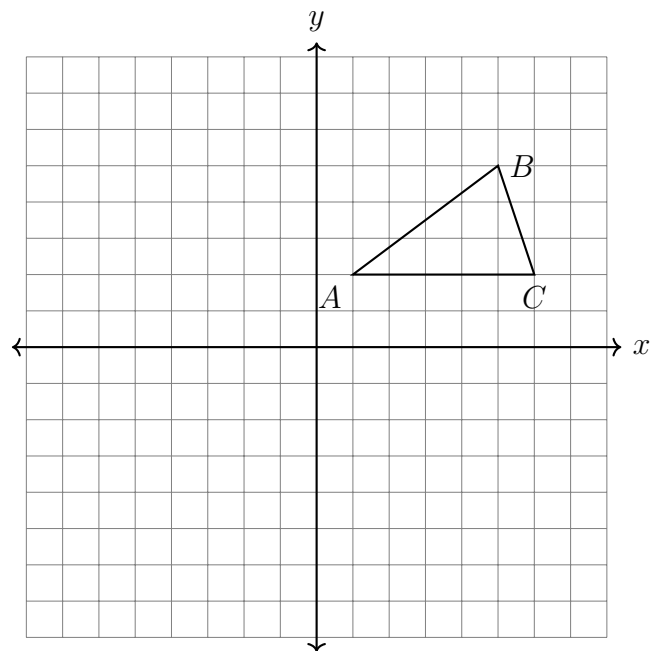


2

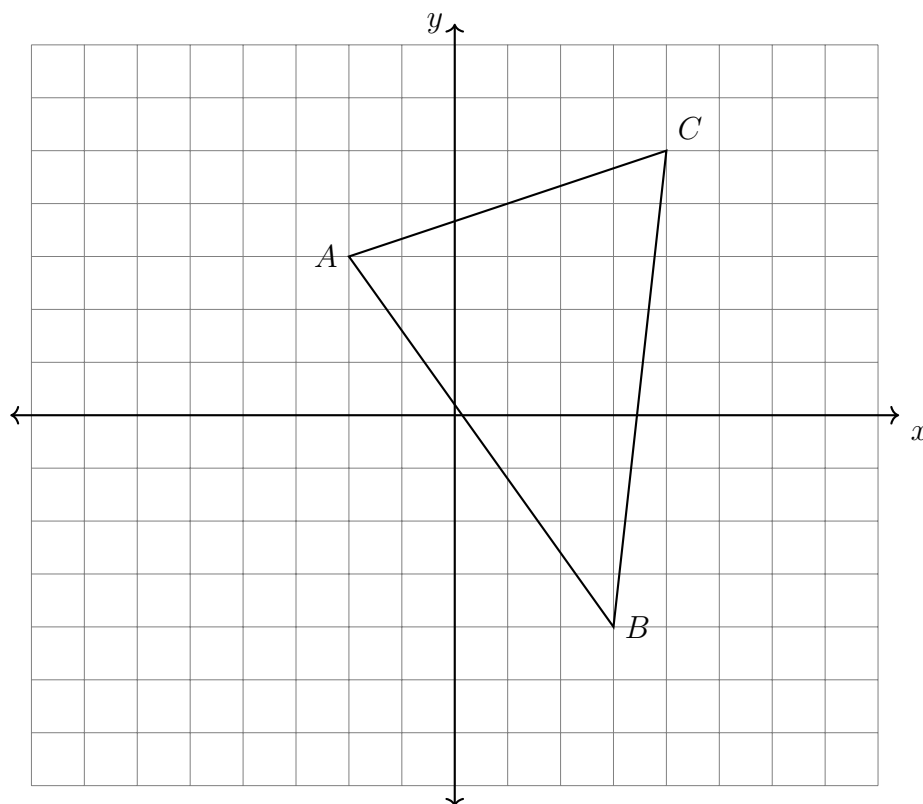
4. Construct a perpendicular to \overline{AB} through C .



5. Apply a clockwise rotation of 90° centered at the origin to $\triangle ABC$. Plot and label the image on the axes below.



6. Reflect $\triangle ABC$ across the y -axis. Label the image $\triangle A'B'C'$ on the graph.



7. A translation is applied to $\triangle ABC$ moving it to the left 4 and down 3.

(a) Write as coordinate pairs the vertices of the image, $\triangle A'B'C'$

$$A(3, -4) \rightarrow$$

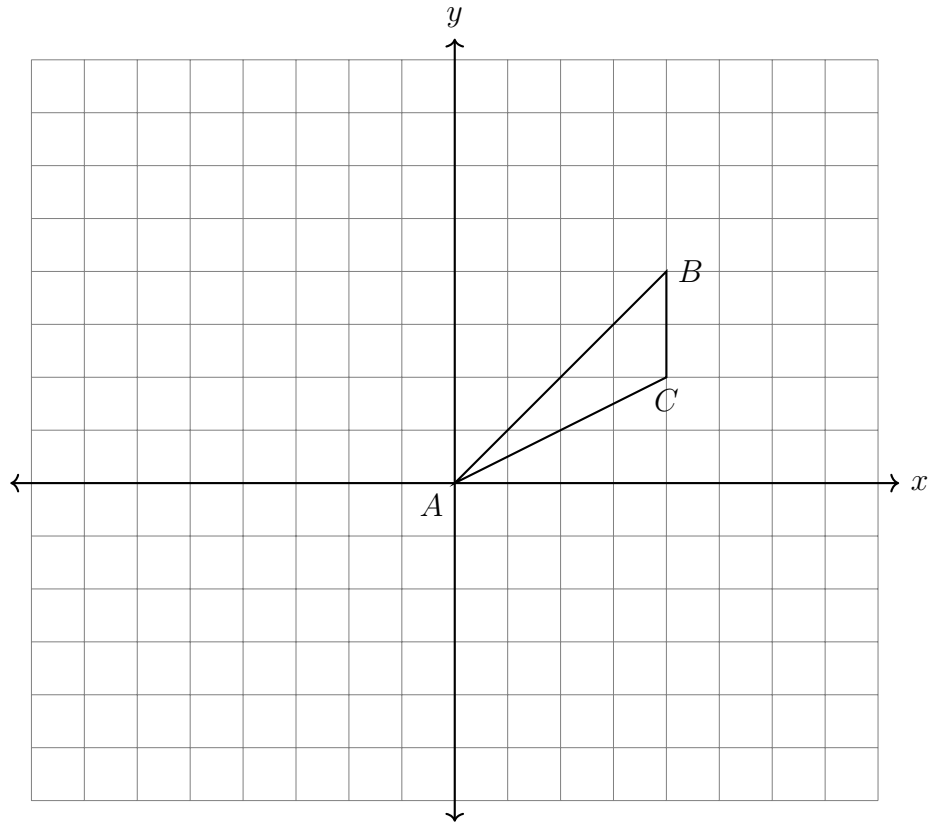
$$B(5, -3) \rightarrow$$

$$C(0, 2) \rightarrow$$

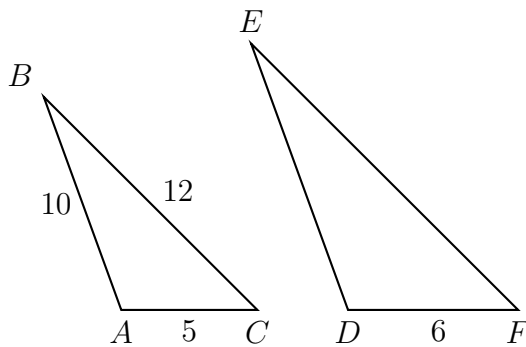
(b) Which triangle is larger, or are they the same size? Justify your answer.

8. A translation maps $D(1, 4) \rightarrow D'(4, -1)$. What is the image of $E(-2, -3)$ under the same translation?

9. Reflect $\triangle ABC$ across the y -axis. Then, dilate $\triangle A'B'C'$ by a factor of $k = 1.5$ centered at the origin to produce $\triangle A''B''C''$. Plot and label the two triangles in the graph below.



10. A dilation maps $\triangle ABC \rightarrow \triangle DEF$, with $AB = 10$, $BC = 12$, $AC = 5$, and $DF = 6$.



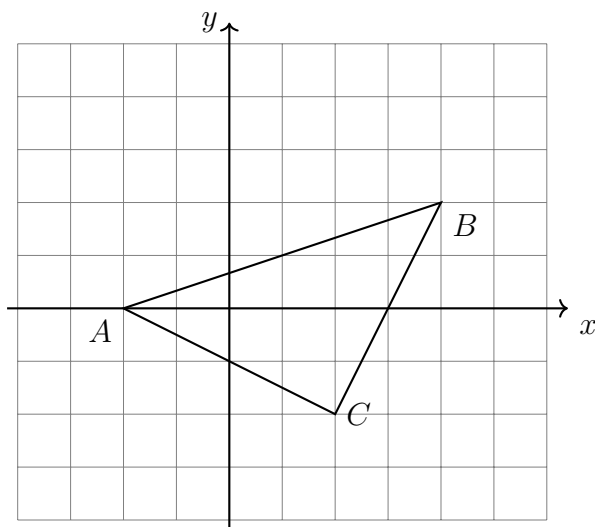
Find the scale factor and missing sides.

(a) $k =$

(b) $DE =$

(c) $EF =$

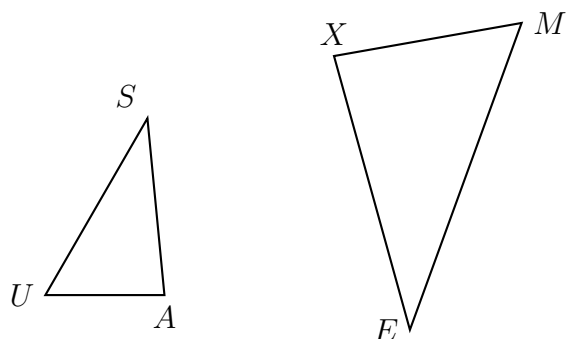
11. Dilate the triangle $ABC \rightarrow A'B'C'$ by a factor of $k = 1.5$ centered at the origin.



Complete the table of coordinate mappings.

$$A(-2, 0) \rightarrow A'(-3, 0)$$

12. Given $\triangle USA \sim \triangle MEX$ and $m\angle U = 60^\circ$, $m\angle A = 85^\circ$. Find the remaining angle measures.



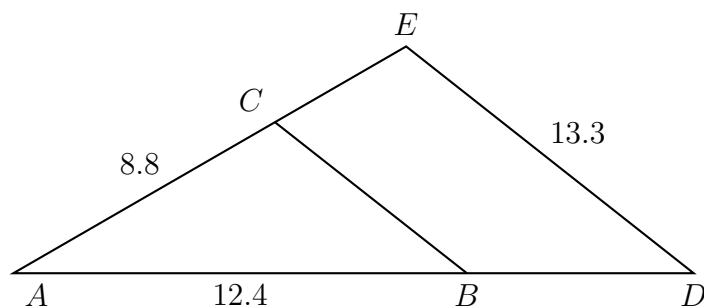
13. A dilation centered at A with a scale factor of $k = 1.75$ maps $\triangle ABC \rightarrow \triangle ADE$. Given $AB = 12.4$, $AC = 8.8$, $DE = 13.3$.

Find the remaining side lengths.

$$AD =$$

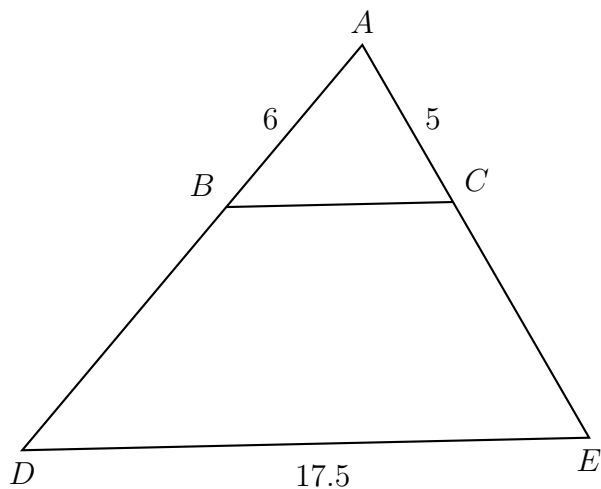
$$AE =$$

$$BC =$$



14. 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 .



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

16. In the diagram below, $\triangle ABC \sim \triangle DEF$, $DE = 6$, $AB = x$, $AC = 2x$, and $DF = 2x + 4$. Determine the length of \overline{AB} .

