**9.3 Homework: Overlapping triangles** **CCSS.HSG.SRT.B.5**

1. Each transformation we study–translation, dilation, rotation, and reflection–have specific details that must be stated to *fully characterize* the transformation. Match the required details with the transformation.

   (a) The center, the degree measure and direction

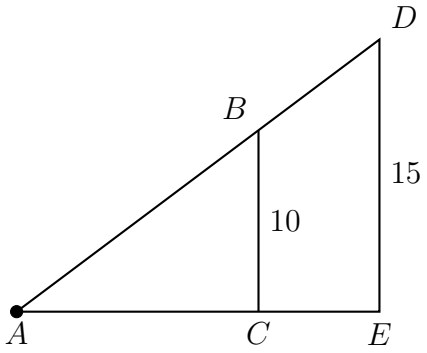
   (b) The line over which it is performed

   (c) The horizontal and vertical distances

   (d) The center and the scale factor $k$

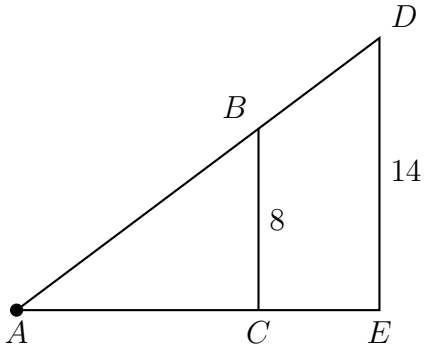
2. A dilation centered at $A$ maps $\triangle ABC \to \triangle ADE$. Given that $BC = 10$, $DE = 15$.

   Write the value of the scale factor $k$ in the box.




3. A dilation centered at $A$ maps $\triangle ABC \to \triangle ADE$. Given that $BC = 8$, $DE = 14$.

   Write the value of the scale factor $k$ in the box.

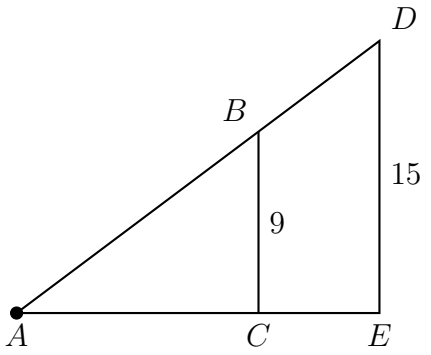



4. A dilation centered at $A$ maps $\triangle ABC \to \triangle ADE$. Given that $BC = 9$, $DE = 15$.

   (a) Find the value of the scale factor $k$.

(b) Given $AB = 12$, find $AD$

(c) Given $AE = 12.5$, find $AC$

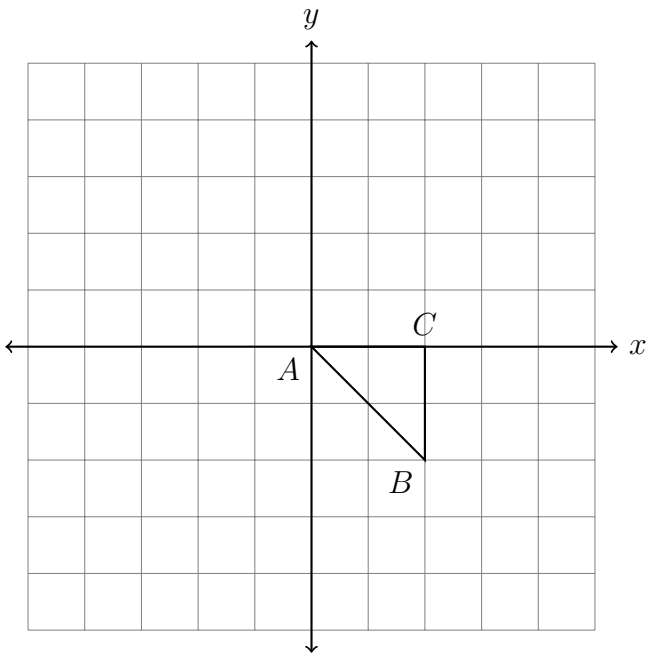



5. Dilate the triangle by a scale factor $k = 2$ centered at the origin, $\triangle ABC \to \triangle A'B'C'$. Complete the table of the coordinates and plot and label the image on the grid.

$A(0, 0) \to$

$B(2, -2) \to$

$C(2, 0) \to$




6. A dilation centered at $A$ maps $\triangle ABC \to \triangle ADE$. Given that $BC = 10$, $DE = 15$.

(a) Find the value of the scale factor $k$.

(b) Given $AB = 12$, find $AD$

(c) Given $AE = 12$, find $AC$