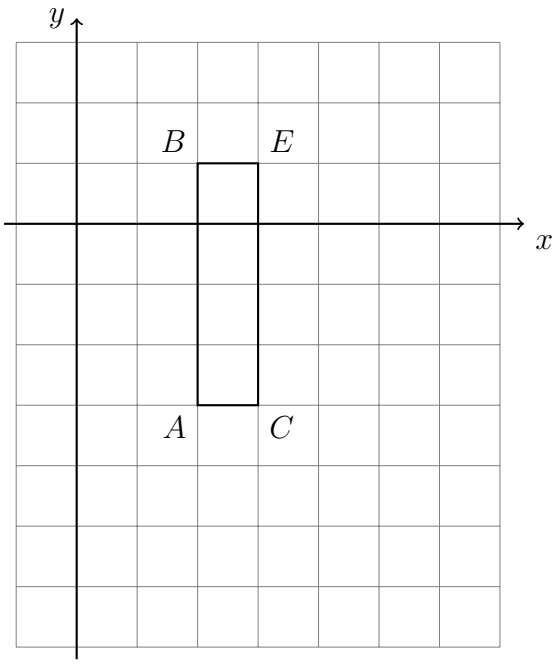
10.4 Classwork: Scaling area and volume **CCSS.HSG.SRT.B.5**

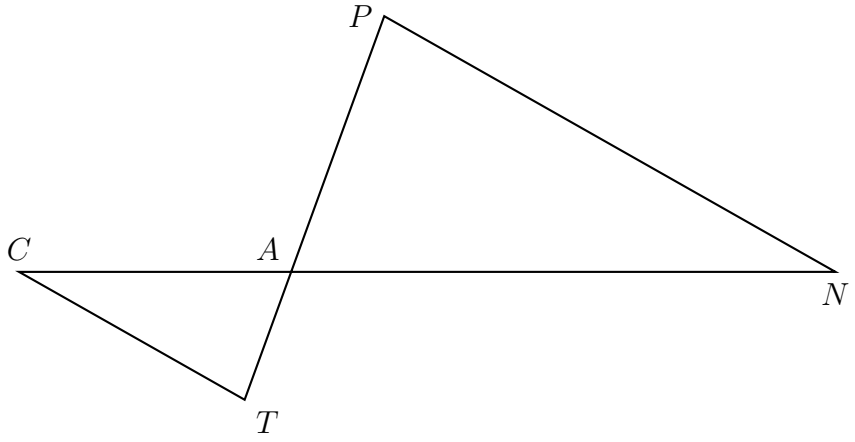
1. Do Now: Dilate rectangle $BECA \to B'E'C'A'$ by a factor of $k = 2$ centered at $(0, 0)$.



Find the area of the preimage and image. (show the length times width calculation)

By what factor did the area scale?

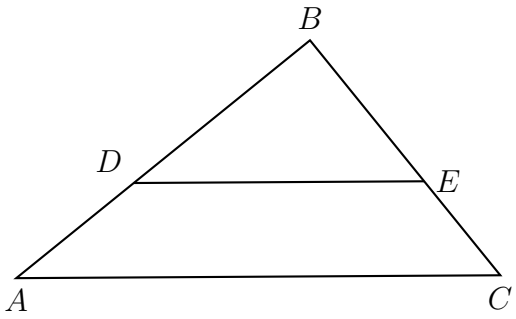
2. Given $\triangle CAT \sim \triangle NAP$. $CA = 14$, $CT = 13.3$, $NA = 28$, $TP = 21$, $m\angle T = 80°$, $m\angle NAP = 70°$. Mark the given values on the diagram, find the scale factor, and solve the triangles (all angles and lengths).



3. After a dilation with center $(0, 0)$, the image of $\overline{ST}$ is $\overline{S'T'}$. If $ST = 8.2$ and $S'T' = 28.7$, find the scale factor of this dilation.

4. Regents problem: In triangle ABC, points D and E are on sides of $\overline{AB}$ and $\overline{BC}$, respectively, such that $\overline{DE} \parallel \overline{AC}$, and $BD : DA = 3 : 2$.

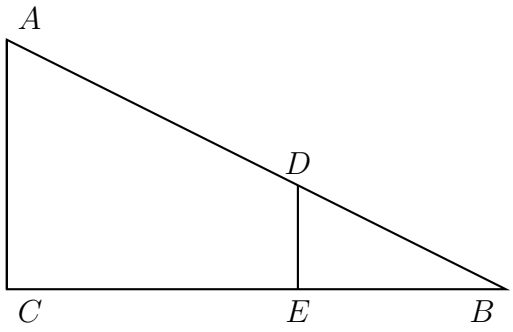
   If $DB = 11.4$ and $DE = 12.6$, what is the length of $\overline{AC}$, to the *nearest tenth*?



5. In right triangle ABC shown below, point D is on $\overline{AB}$ and point E is on $\overline{BC}$ such that $\overline{AC} \parallel \overline{DE}$. Given $AB = 13.2$, $BC = 12$, and $EC = 7$.

   (a) Find the length of $\overline{BE}$.

   (b) Find the scale factor, k, dilating $\triangle DBE \to \triangle ABC$, centered at B.



   (c) Find BD.

   (d) Find as many other lengths and angle measures as you can.