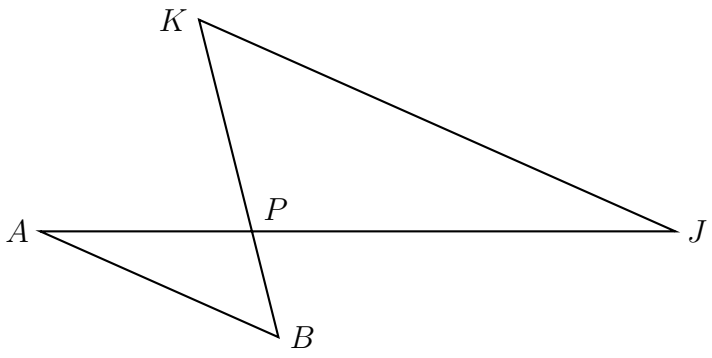
13-1 Classwork: Similar triangles, dilation ratios

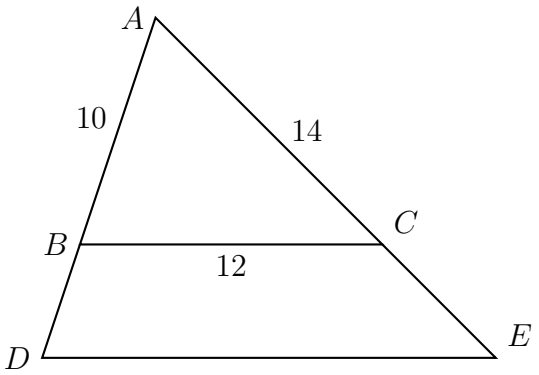
1. Given $\triangle ABP$ and $\triangle JKP$ as shown below. $\overline{AB} \parallel \overline{JK}$. Prove $\triangle ABP \sim \triangle JKP$.



Statement	Reason
1) $\triangle ABP$, $\triangle JKP$	1) Given
2) _____	2) Given
3) $\angle APB \cong \angle JPK$	3) _____
4) $\angle PAB \cong \angle PJK$	4) _____
5) $\triangle ABP \sim \triangle JKP$	5) _____

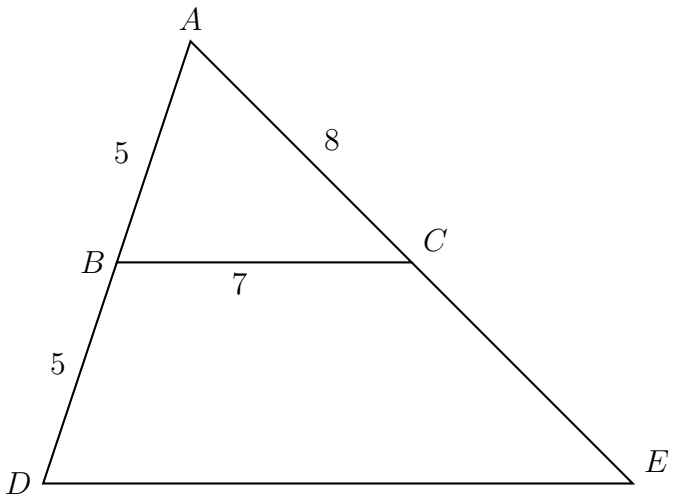
2. Triangle ABC is dilated with a factor of $\frac{3}{2}$ centered at A, yielding $\triangle ADE$, as shown. Given $AB = 10$, $BC = 12$, and $AC = 14$.

   Find AD, AE, and DE.

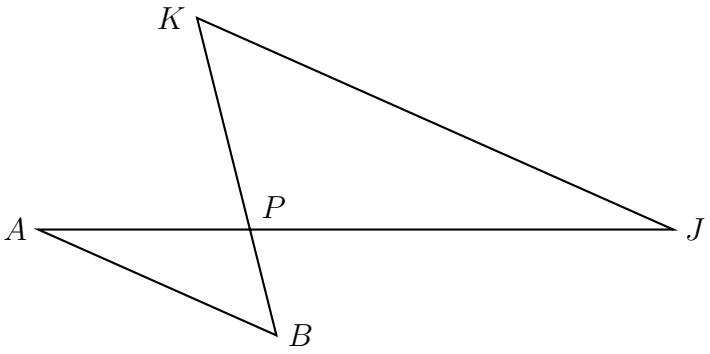


3. Triangle ADE is drawn with $\overline{BC} \parallel \overline{DE}$, as shown. Given $AB = 5$, $BC = 7$, $AC = 8$, and $BD = 5$.

   Find CE, AE, and DE.



4. Given $\triangle ABP$ and $\triangle JKP$ as shown below. $\overline{AB} \parallel \overline{JK}$. $AP = 5.7$, $JP = 11.4$, and $JK = 14.8$. Find AB.



13-1 Homework: Similar triangles, dilation ratios

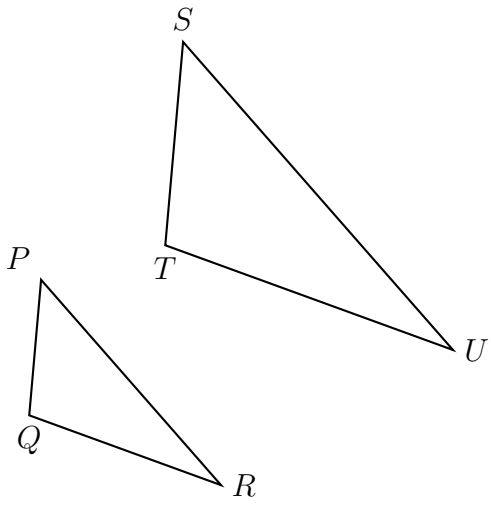
1. A dilation maps triangle PQR onto triangle STU with $QR = 4$ and $TU = 6$.

   (a) $\overline{QR} \to$ _____

   (b) Complete the fraction numerators with the corresponding segment and length:

   $k = \frac{\overline{\quad}}{QR} = \frac{\overline{\quad}}{4}$

   (c) What scale factor maps $\triangle PQR \to \triangle STU$?



2. Triangle ADE and its midline $\overline{BC}$ are drawn, with B the midpoint of $\overline{AD}$ and C the midpoint of $\overline{AE}$. The two medians $\overline{AE}$ and $\overline{AE}$ are drawn, as shown, intersecting in point F, the centroid.

   $\triangle FCB \sim \triangle FDE$ with scale factor $k = 2$.

   Given $BC = 7$, find DE.

   Given $BF = 4$, find FE.