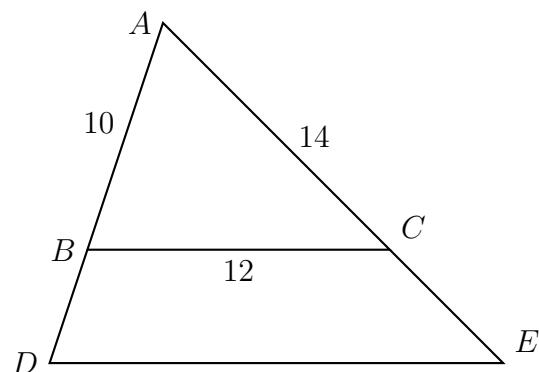


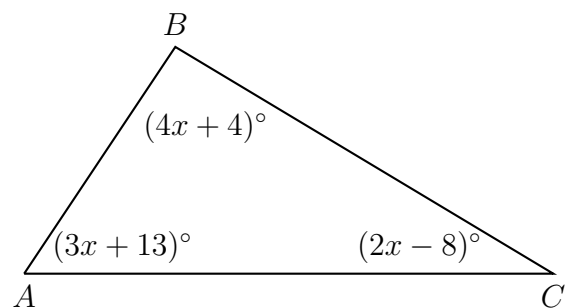
**5-8DNb-similarity-ratios**

1. 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  $DE$ .



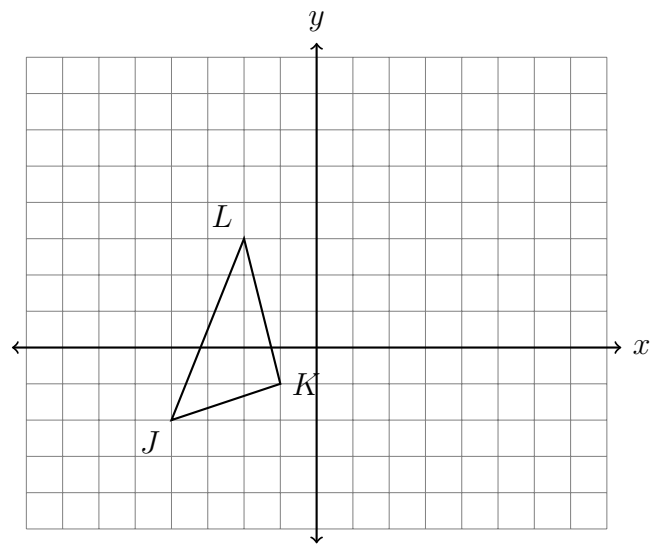
2. In  $\triangle ABC$  shown below,  $m\angle A = (3x + 13)^\circ$ ,  $m\angle B = (4x + 4)^\circ$ , and  $m\angle C = (2x - 8)^\circ$ . What is  $m\angle A$ ?



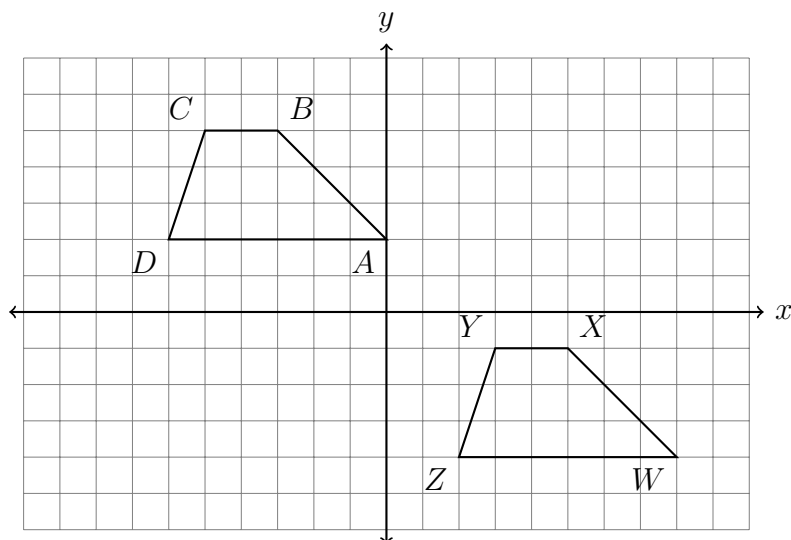
3. Find the image of  $A(-3, 1)$  after the translation  $(x, y) \rightarrow (x + 4, y - 2)$ .

4. The vertices of  $\triangle JKL$  have the coordinates  $J(-4, -2)$ ,  $K(-1, -1)$ , and  $L(-2, 3)$ , as shown below.

Apply a translation of  $(x, y) \rightarrow (x + 7, y + 2)$  to  $\triangle JKL$  yielding the triangle  $\triangle J'K'L'$ . List its coordinates in a table and plot it on the set of axes below, labeling the vertices.

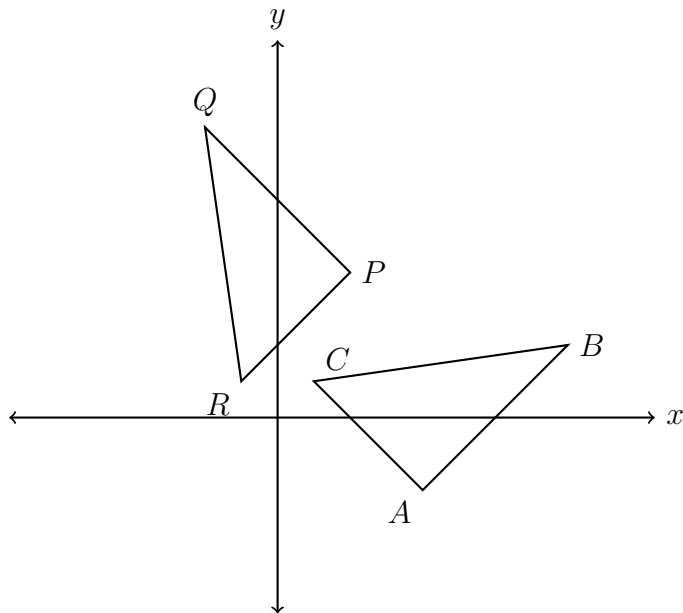


5. The trapezoid  $ABCD$ , shown below, undergoes a rigid transformation carrying it onto trapezoid  $WXYZ$ . State the transformation. (be specific)

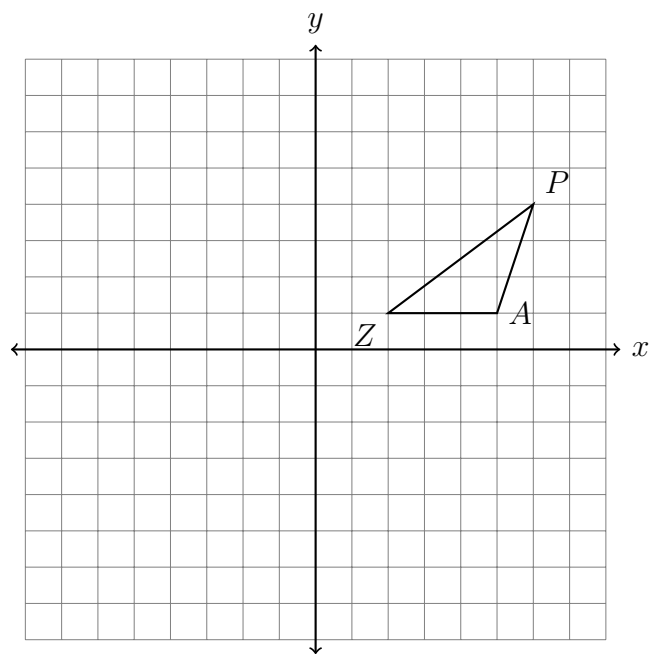


6. A rotation of  $90^\circ$  is applied to  $\triangle ABC$ , mapping it onto  $\triangle PQR$ , as shown.

Which triangle has the larger area, or are they equal? Justify your answer.



7. Apply a rotation of  $90^\circ$  counterclockwise to  $\triangle ZAP$ . Plot and label  $\triangle Z'A'P'$  on the axes below and make a table listing its coordinates.

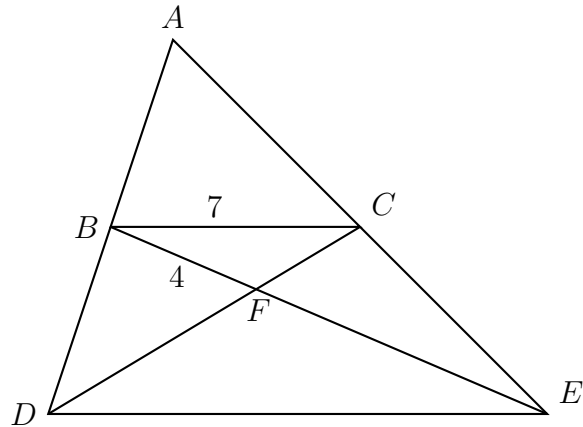


8. Triangle  $ADE$  and its midline  $\overline{BC}$  are drawn, with  $B$  the midpoint of  $\overline{AD}$  and  $C$  the midpoint of  $\overline{AE}$ . The two medians  $\overline{BE}$  and  $\overline{CD}$  are drawn, as shown, intersecting in point  $F$ , the centroid.

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

Given  $BC = 7$ , find  $DE$ .

Given  $BF = 4$ , find  $FE$ .



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

