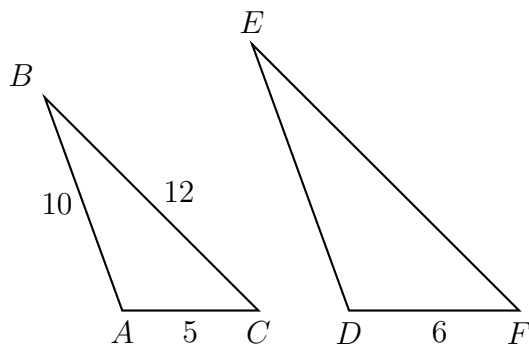


Name:

9.3 Classwork: Overlapping triangles

CCSS.HSG.SRT.B.5

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



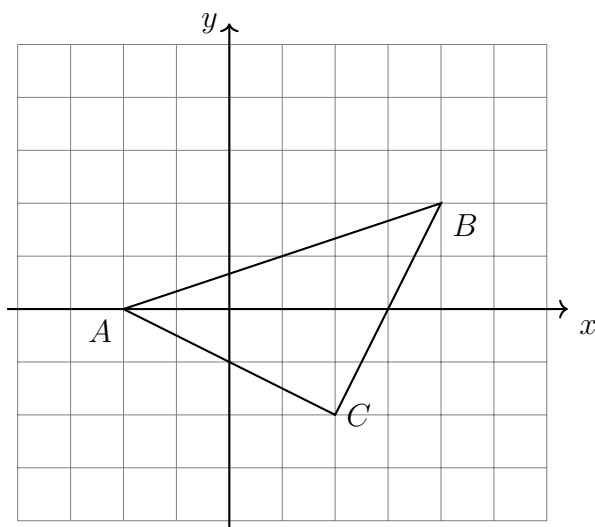
Find the scale factor and missing sides.

(a) $k =$

(b) $DE =$

(c) $EF =$

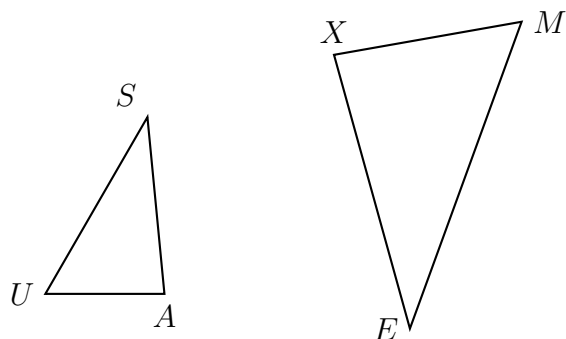
2. Dilate the triangle $ABC \rightarrow A'B'C'$ by a factor of $k = 1.5$ centered at the origin.



Complete the table of coordinate mappings.

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

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



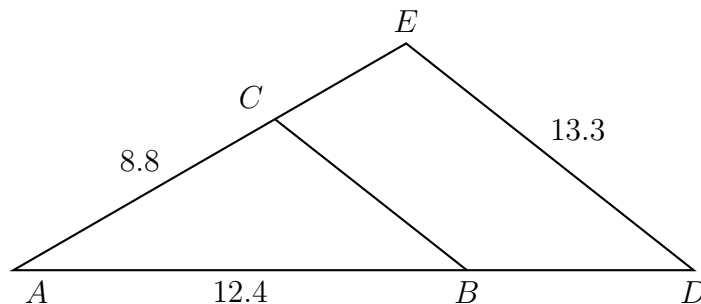
4. A dilation centered at A with a scale factor of $k = 1.75$ maps $\triangle ABC \rightarrow \triangle ADE$. Given $AB = 12.4$, $AC = 8.8$, $DE = 13.3$.

Find the remaining side lengths.

$AD =$

$AE =$

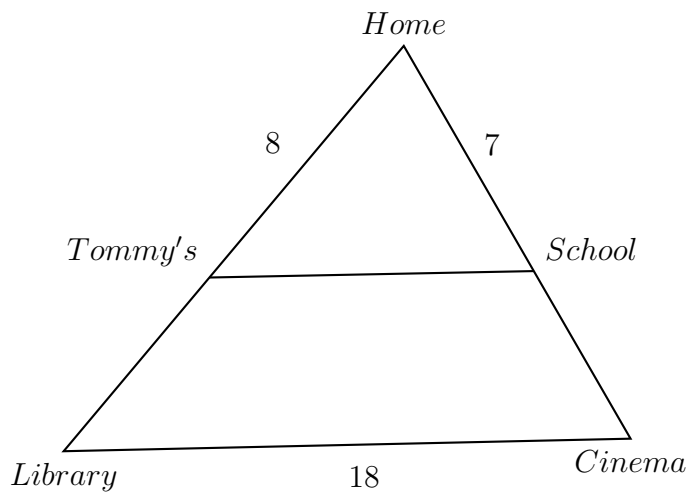
$BC =$



5. Triangle HTS , where $H = \text{Home}$, is dilated with a scale factor of $k = 2$ centered at H , yielding $\triangle HLC$, as shown.

Given $HT = 8$ blocks, $HS = 7$ blocks, and $LC = 18$ blocks. There are twenty blocks to a mile.

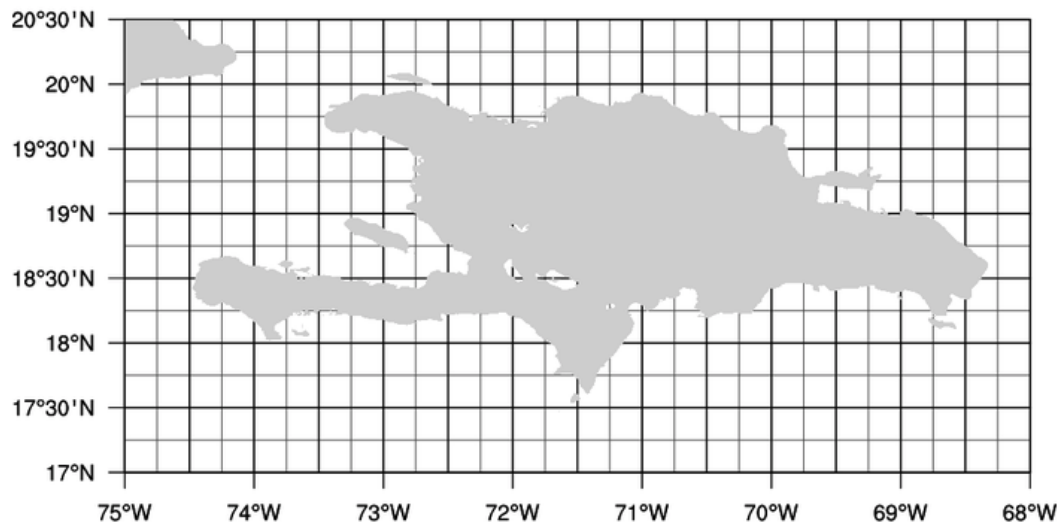
- (a) Steven walks from school to Tommy's and then walks home. What fraction of a mile did he walk?



- (b) Steven's sister, Marie, goes to the cinema after school and then walks back home. Did she walk more or less than a mile?

Name:

6. Show below is a map of Hispanola with a grid of lines of longitude (north south) and latitude (east west). Mark the following features on the map:
- (a) The approximate national border between Haiti and the Dominican Republic at the line of longitude 71.75° (through Lago Enriquillo).
 - (b) The capital city of Santo Domingo at 18.5° N, 70° W.
 - (c) The Haitian capital Port-au-Prince at 18.5° N, 72.25° W.
 - (d) The world famous Kite Beach, Cabarete at 19.75° N, 70.4° W.



Each degree of latitude or longitude is approximately 110 kilometers.

- (e) By how many degrees of longitude do Port-au-Prince and Santo Domingo differ?
- (f) Calculate the distance between the two capital cities.
- (g) Calculate the distance from Santo Domingo to Cabarete.