Unit 9: Dilation Name:
23 January 2022

9.5 Classwork: Scale applications **CCSS.HSG.SRT.B.5**

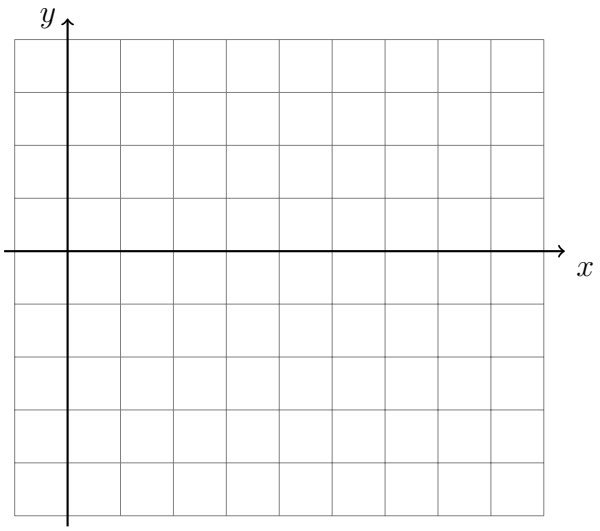
1. Plot on the grid points representing these cities: Port-au-Prince is located at (3, -2) and Caracas is located at (6, -4). Washington DC is located at (3, 1) and New York City is located at (6, 2). Scale factor: 1 grid unit = 300 kilometers.

   Find the distance between each pair of cities in grid units *and* kilometers.

   (a) New York City and Caracas.

   (b) Port-au-Prince and Washington DC.

   (c) Port-au-Prince and Caracas.



2. Dr. Huson's classroom is 24.5 feet wide. A model of the classroom is 4 inches wide. What is the scale factor?

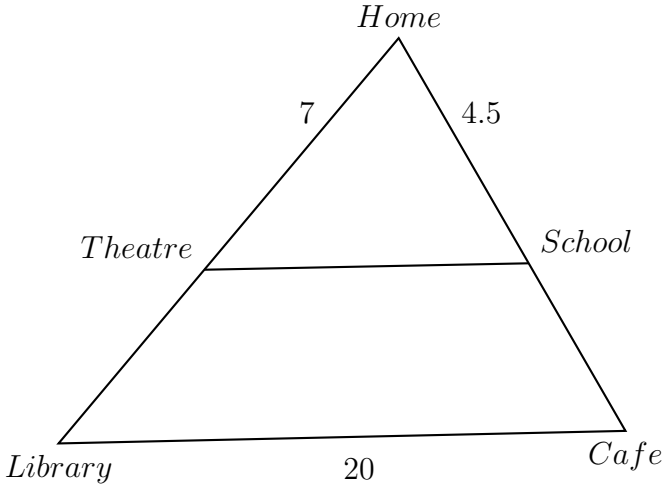
3. A model of BECA has a scale of 1 in : 4 ft. If the real BECA is 332 feet wide then how wide is the model BECA?

4. Boston and New York City are 147 cm apart from each other on a map. How far apart are the two cities in real life? The map's key tells you that 3 cm is 7 km.

5. Triangle HTS, where $H = Home$, is dilated with a scale factor of $k = 1.75$ centered at H, yielding $\triangle HLC$, as shown. Given $HT = 7$ km, $HS = 4.5$ km, and $LC = 20$ km.

   (a) Student A walks from school to the theatre and then walks to the library. How many kilometers did student A walk?

   (b) Student B decides to walk from school to the cafe and then walk back home. How many kilometers did student B walk?



6. Reflect $\triangle ABC$ across the y-axis. Then, dilate $\triangle A'B'C'$ by a factor of k = 1.5 centered at the origin to produce $\triangle A''B''C''$. Plot and label the two triangles in the graph below.