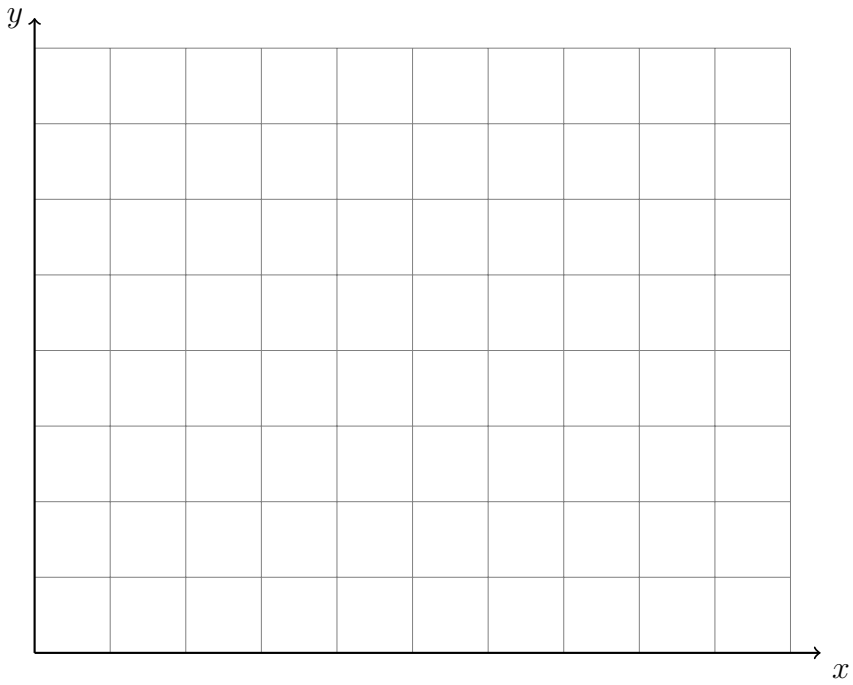
BECA / Dr. Huson / Geometry 07-Similarity Name:
pset ID: 103

7-2DN-Tangent

1. (a) Graph and label $\triangle ABC$ with $A(0,0)$, $B(7,4)$, and $C(7,0)$.



(b) Find the slope and y-intercept of the line $\overleftrightarrow{AB}$.

$m_{AB} =$ $b_{AB} =$

(c) Write down the equation of each line.

$\overleftrightarrow{AB}$: $\overleftrightarrow{BC}$: $\overleftrightarrow{AC}$:

(d) Find the measure of $\angle BAC$ in degrees with a protractor.

(e) Find the same $m\angle BAC$ with a calculator's inverse tangent function.

$\tan^{-1}(\frac{4}{7}) =$

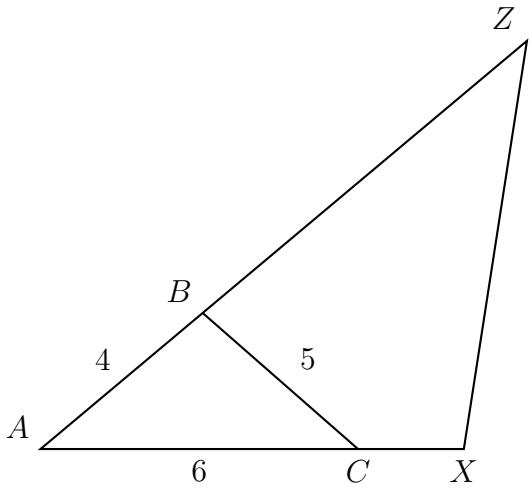
2. Given $\triangle ABC$ has sides $AC = 6$, $BC = 5$, $AB = 4$. $\triangle ABC$ is reflected across the bisector of $\angle BAC$ and then dilated by a factor of $k = 2$ centered at A, creating the image shown. Complete the similarity statement (with the letters in the right order) and calculate the lengths of the triangle image.

   (a) $\triangle ABC \sim$

   (b) $AZ =$

   (c) $AX =$

   (d) $XZ =$



3. Given $\triangle ABC \sim \triangle AED$ and $AB = 11$, $BC = 8$, $AC = 15$, $DE = 24$.

   Find:

   (a) $k =$

   (b) $AD =$

   (c) $AE =$

   (d) $CE =$