

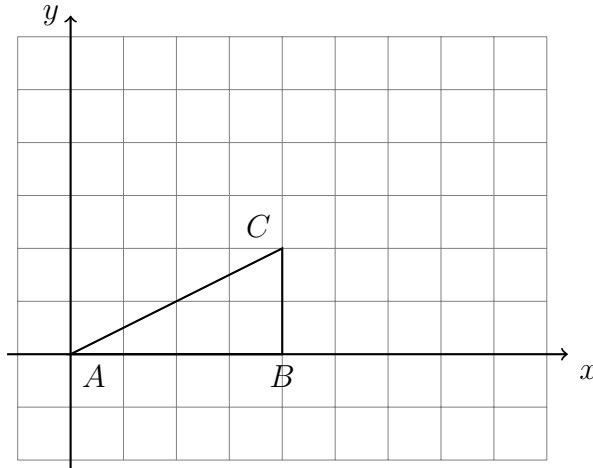
Name:

### 9.1 Classwork: Dilation

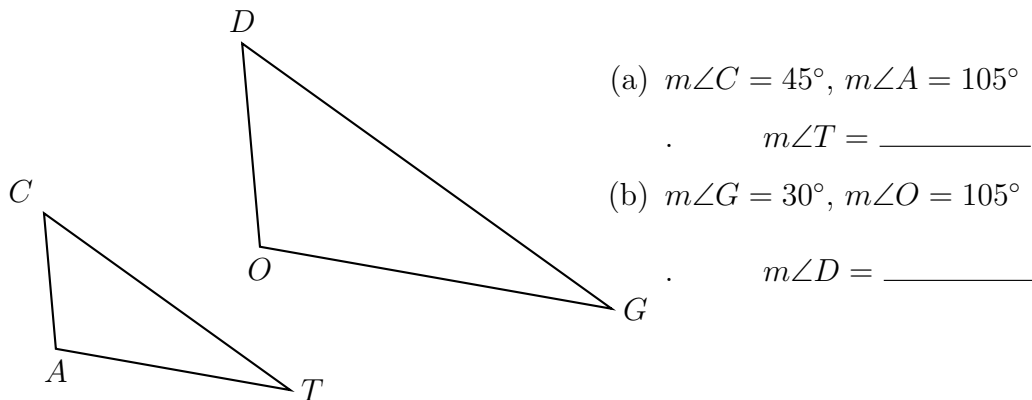
CCSS.HSG.SRT.B.5

1. Do Now: Plot and label the triangle  $A'B'C'$ .  $A'(0,0)$ ,  $B'(8,0)$ ,  $C'(8,4)$ .

Make a list of comparisons of the two triangles: their sides' lengths, location, their angles, orientation, area and perimeter.

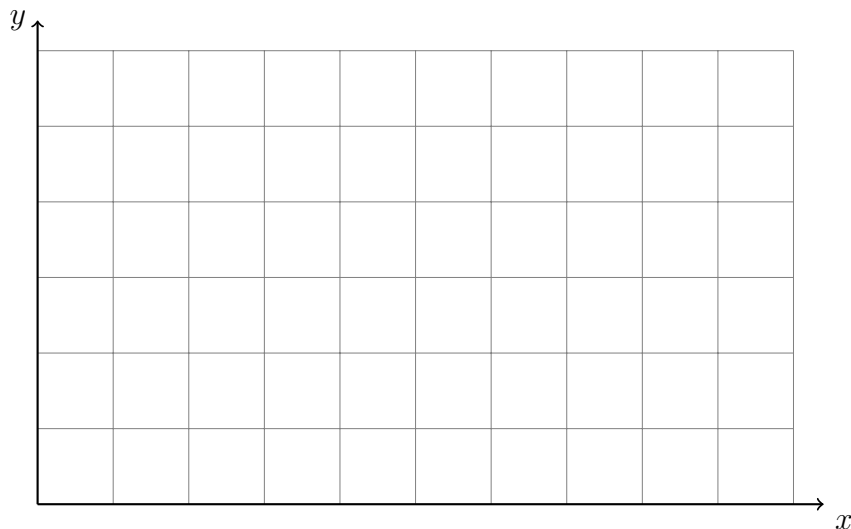


2. Find the missing angle measures. Are  $\triangle CAT$  and  $\triangle DOG$  congruent?



3. This is the symbol for similar triangles:  $\triangle ABC \sim \triangle DEF$ . Write down two definitions of similar triangles.

4. (a) Graph and label  $\triangle ABC$  with  $A(0,0)$ ,  $B(3,2)$ , and  $C(3,0)$ .



- (b) Dilate or stretch the triangle by a factor of  $k = 3$  centered at the origin.  
 $\triangle ABC \rightarrow \triangle A'B'C'$

- (c) Find each ratio or fraction.

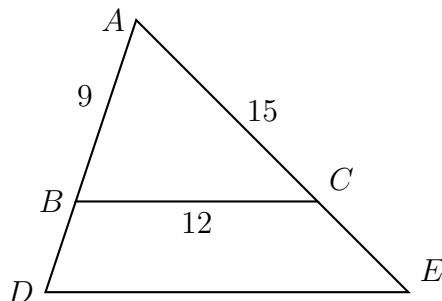
$$\frac{A'C'}{AC} =$$

$$\frac{B'C'}{BC} =$$

$$\frac{A'B'}{AB} =$$

5. Triangle  $ABC$  is dilated with a scale factor of  $k = \frac{5}{3}$  centered at  $A$ , yielding  $\triangle ADE$ , as shown. Given  $AB = 9$ ,  $BC = 12$ , and  $AC = 15$ .

Find  $AD$ ,  $AE$ , and  $DE$ .



Definition of *similar* triangles: Triangles that have the same shape, but not necessarily the same size, are similar. Their corresponding angles are congruent and their corresponding sides are proportional.

Dilation definition of similarity: Two figures are similar if one or more rigid motions and a dilation will carry one figure onto the other.