

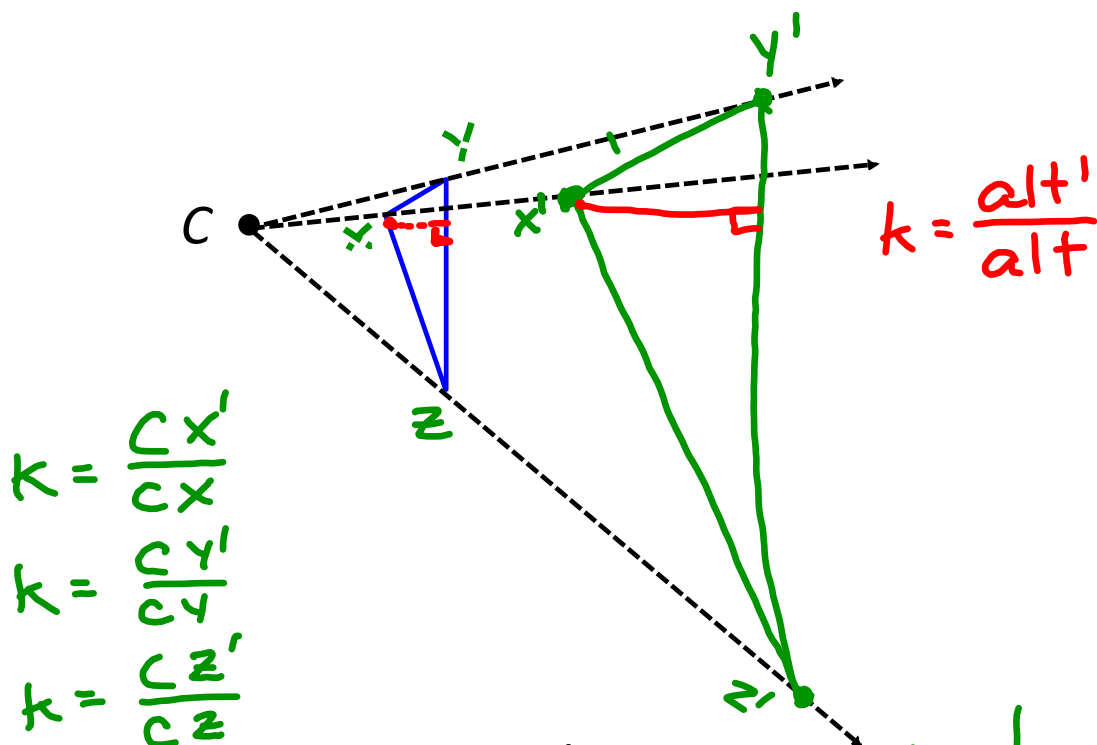
A DILATION with center  $C$  and scale factor  $k$  is a transformation that maps every point  $P$  to a point  $P'$  so that the following are true:

1) If  $P$  is not the center, then the image  $P'$  lies on  $\overrightarrow{CP}$

2) The scale factor  $k$  is a positive # such that

$$k = \frac{CP'}{CP} \quad \text{and} \quad k \neq 1$$

$\downarrow$   
image  
pre-image



Note: Pre-Image and Image are similar

If  $0 < k < 1$ , then the dilation is a **reduction**

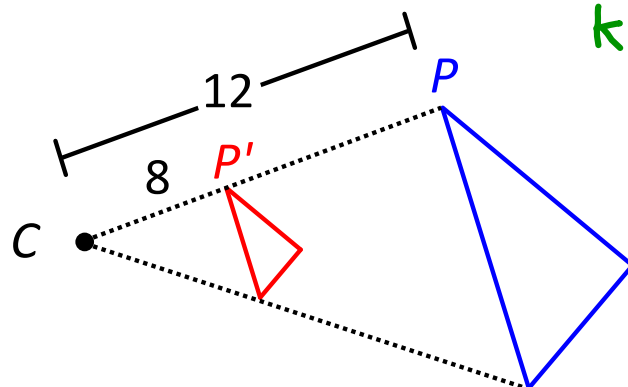
(Image is smaller than pre-image)

If  $k > 1$ , then the dilation is an **enlargement**

(Image is bigger than pre-image)

Identify each dilation and find its scale factor

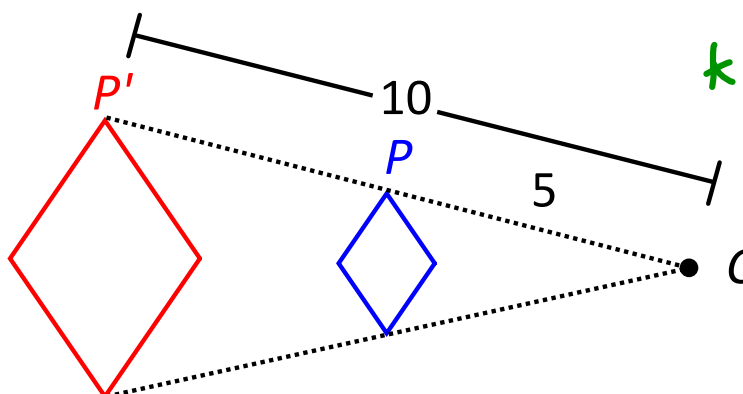
a)



$$k = \frac{CP'}{CP} = \frac{8}{12}$$
$$\boxed{k = \frac{2}{3}}$$

Reduction

b)



$$k = \frac{CP'}{CP} = \frac{10}{5} = \boxed{2}$$

Enlargement!