

Example #5:

Homework: L7.5 1-29, 33-37

L7.6 Dilations

def/ dilation: A dilation is a transformation with center C and scale factor K that maps each point P to an image pt. P' so that P' lies on \overrightarrow{CP} and $CP' = K \cdot CP$.

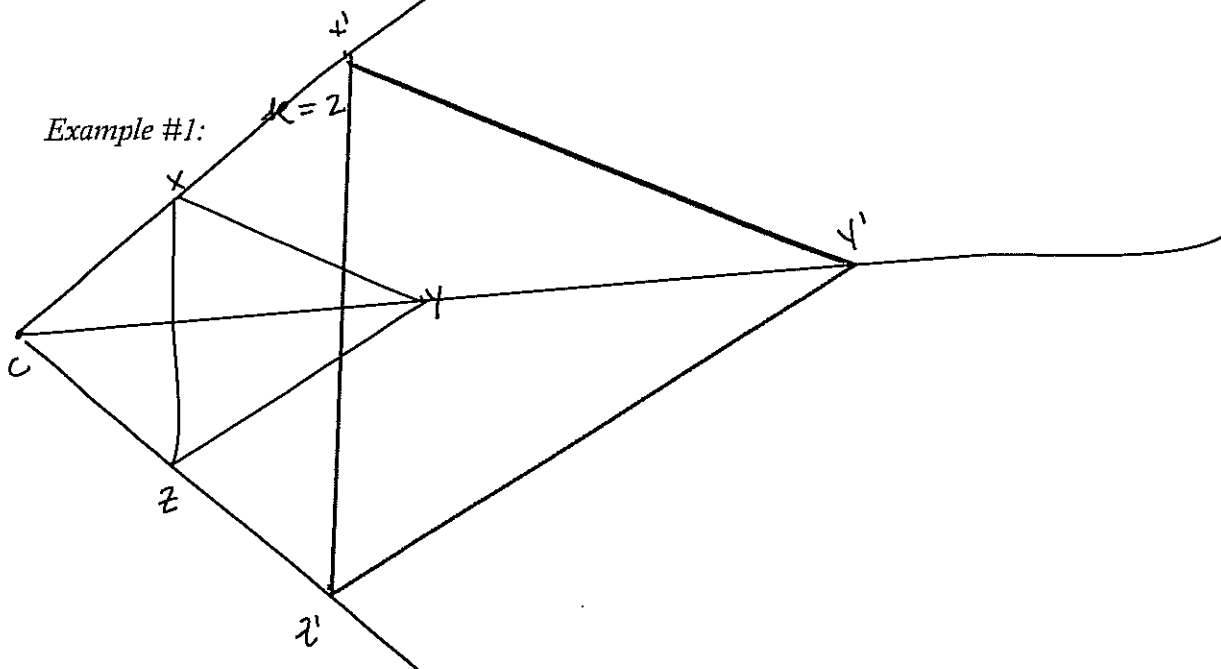
reduction/enlargement:

If the image is smaller than the pre-image, then the dilation is a reduction / contraction $\& K < 1$.

If the image is larger than the pre-image, then the dilation is an enlargement $\& K > 1$.

scale factor:

The scale factor is the ratio of $\frac{CP'}{CP}$ $\frac{\text{image}}{\text{pre-image}}$



$$CX = 25$$

$$CX' = 2(25) = 50$$

$$CY = 50$$

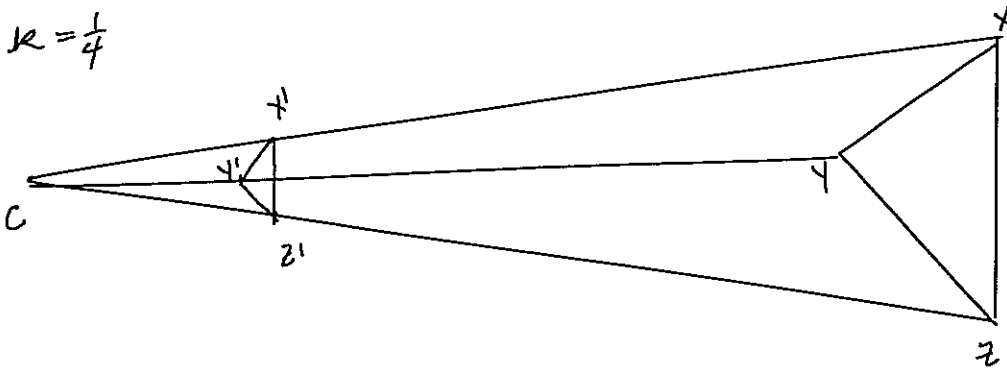
$$CY' = 2(50) = 100$$

$$CZ = 24$$

$$CZ' = 48$$

Example #2: $K = .25$

$$K = \frac{1}{4}$$



$$CX = 117$$

$$CX' = \frac{1}{4}(117) = 29.25$$

$$CY = 98$$

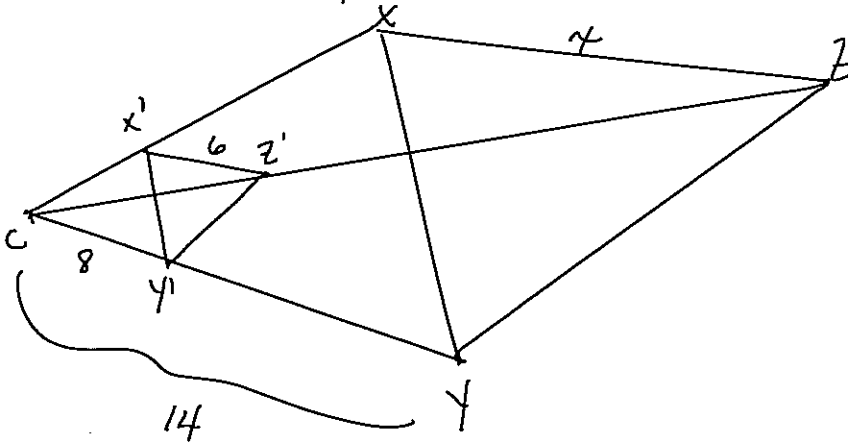
$$CY' = \frac{1}{4}(98) = 24.5$$

$$CZ = 117$$

$$CZ' = \frac{1}{4}(117) = 29.25$$

Example #3:

$$K = \frac{CY'}{CY} = \frac{8}{14}$$



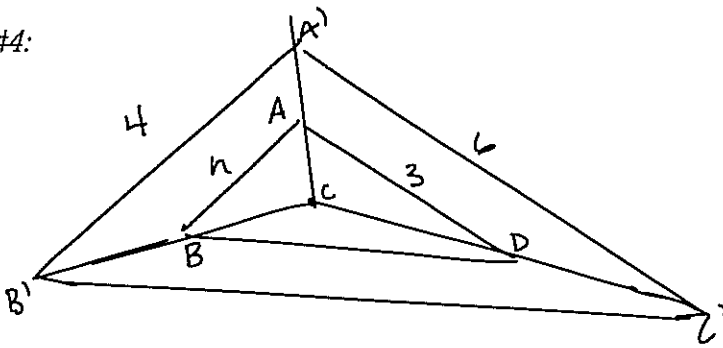
$\frac{\text{new}}{\text{old}}$

$$\frac{8}{14} = \frac{4}{7}$$

$$8 \times 7 = 56$$

$$X = 10.5$$

Example #4:



$$\frac{4}{n} = \frac{6}{3}$$

$$\frac{12}{4} = \frac{6n}{6}$$

$$2 = n$$