# Lesson 2.1.5: Scale Factor

## Targets:

1. Given a scale drawing, I can use the scale factor to find missing lengths.
2. I can use proportions to find missing lengths.

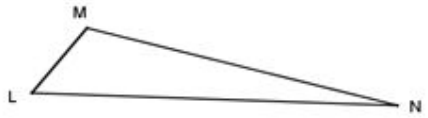
## Warm Up

*Quick write: Describe how a figure is transformed under a dilation with a scale factor of…*

a. $r = 1$ b. $r > 1$ c. $0 < r < 1$

## Practice 1

a. Produce a scale drawing of $\Delta LMN$ using either the ratio or parallel method with point $M$ as the center and a scale factor of $\frac{3}{2}$.

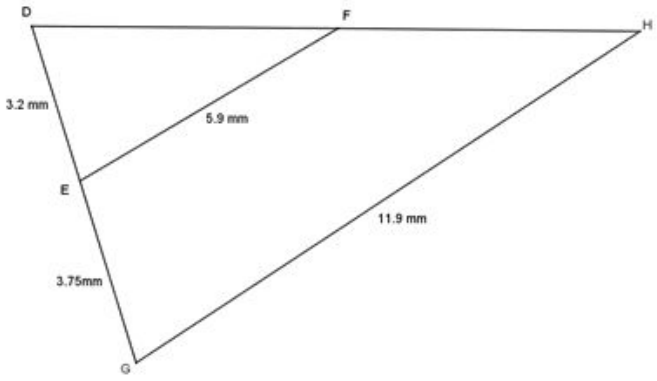



b. Given what we've learned in this unit so far, what are some properties that we know to be true with the new dilation? Are any sides parallel? Are any sides proportional? If LM is 3cm and MN is 7cm, what are the lengths of L'M and N'M?

c. If side LN has a length of 12cm, what is the length of L'N'?

## Practice 2

Given the diagram below, determine if $\Delta DEF$ is a scale drawing of $\Delta DGH$. Explain why or why not.



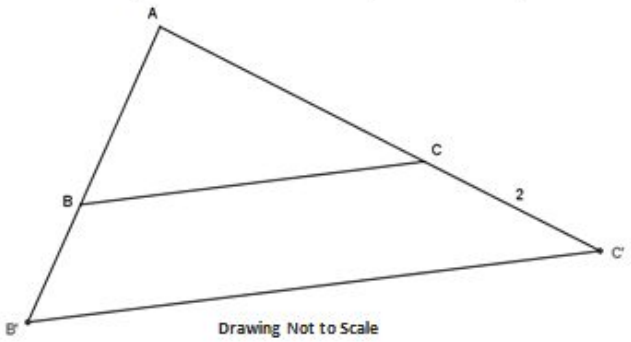
## Practice 3

$\Delta AB'C'$ is a dilation of $\Delta ABC$ from vertex $A$, and $CC' = 2$. Use the given information in each part and the diagram to find $B'C'$.

a. $AB = 9, AC = 4$, and $BC = 7$

b. $AB = 4, AC = 9$, and $BC = 7$

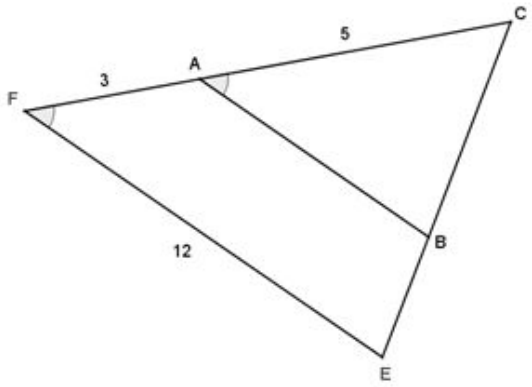
c. $AB = 7, AC = 9$, and $BC = 4$




Drawing Not to Scale

## Practice 4

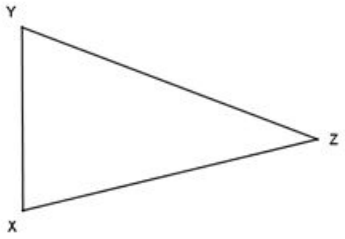
Given the diagram, $\angle CAB \cong \angle CFE$. Find $AB$.




## Exit Ticket

### Exit Ticket 1

Produce a scale drawing of $\Delta XYZ$ with point $X$ as the center and a scale factor of $\frac{1}{4}$. If the length of YZ is 10cm, find the length of Y'Z'.



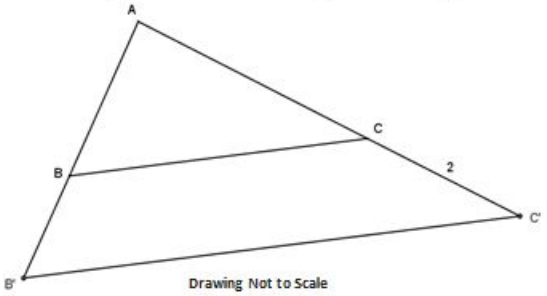

### Exit Ticket 2

$\Delta AB'C'$ is a dilation of $\Delta ABC$ from vertex $A$, and $CC' = 2$. Use the given information in each part and the diagram to find $B'C'$.

a. $AB = 7, AC = 4$, and $BC = 9$

b. $AB = 4, AC = 7$, and $BC = 9$

c. $AB = 9, AC = 7$, and $BC = 4$




Drawing Not to Scale