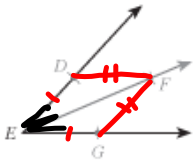


## Work on these ACT problems below...

In the figure below, ray  $\overrightarrow{EF}$  was constructed starting from rays  $\overrightarrow{ED}$  and  $\overrightarrow{EG}$ . By using a compass  $D$  and  $G$  were marked equidistant from  $E$  on rays  $\overrightarrow{ED}$  and  $\overrightarrow{EG}$ . The compass was then used to locate a point  $F$ , distinct from  $E$ , so that  $F$  is equidistant from  $D$  and  $G$ . For all constructions defined by the above steps, the measures of  $\angle DEF$  and  $\angle GEF$ :



$$\begin{aligned} \overline{ED} &\cong \overline{EG} & \triangle EDF &\cong \triangle EGF \text{ (SSS)} \\ \overline{DF} &\cong \overline{GF} \end{aligned}$$

F.  are equal.

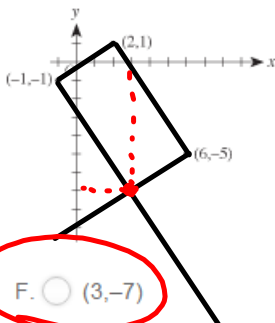
G.  are NOT equal.

H.  sum to  $30^\circ$ .

I.  sum to  $45^\circ$ .

J.  sum to  $60^\circ$ .

In the standard  $(x,y)$  coordinate plane below, 3 of the vertices of a rectangle are shown. Which of the following is the 4th vertex of the rectangle?



F.   $(3, -7)$

G.   $(4, -8)$

~~H.   $(5, -1)$~~

~~I.   $(8, -3)$~~

~~J.   $(9, -3)$~~

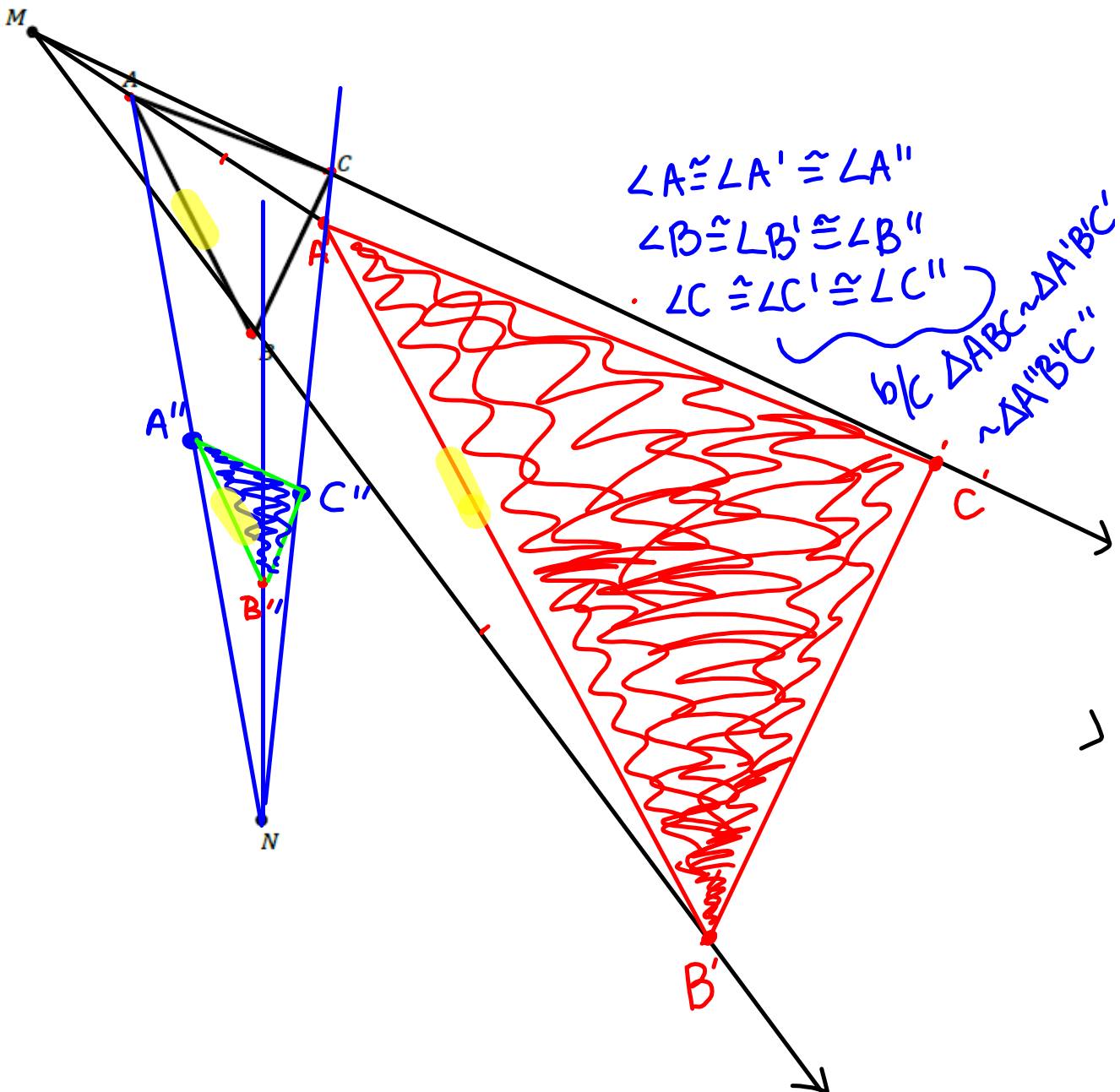
# 6.2 Triangle Dilations

## A Solidify Understanding Task

1. Given  $\triangle ABC$ , use point  $M$  as the center of a dilation to locate the vertices of a triangle that has side lengths that are three times longer than the sides of  $\triangle ABC$ .
2. Now use point  $N$  as the center of a dilation to locate the vertices of a triangle that has side lengths that are one-half the length of the sides of  $\triangle ABC$ .



① Draw  $\vec{MA}$ ,  $\vec{MB}$ ,  $\vec{MC}$



3. Label the vertices in the two triangles you created in the diagram above. Based on this diagram, write several proportionality statements you believe are true. First write your proportionality statements using the names of the sides of the triangles in your ratios. Then verify that the proportions are true by replacing the side names with their measurements, measured to the nearest millimeter.

**My list of proportions:** (try to find at least 10 proportionality statements you believe are true)

$$\frac{AB}{A'B'} = \frac{BC}{B'C'} = \frac{AC}{A'C'}$$

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

$$\frac{AB}{A''B''} = \frac{BC}{B''C''} = \frac{AC}{A''C''}$$

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

$$\frac{BA}{B'A'} = \frac{CB}{C'B'}$$

same figure

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

corresponding side lengths

OR

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

same figure

corresponding side lengths

~~NO!!!~~

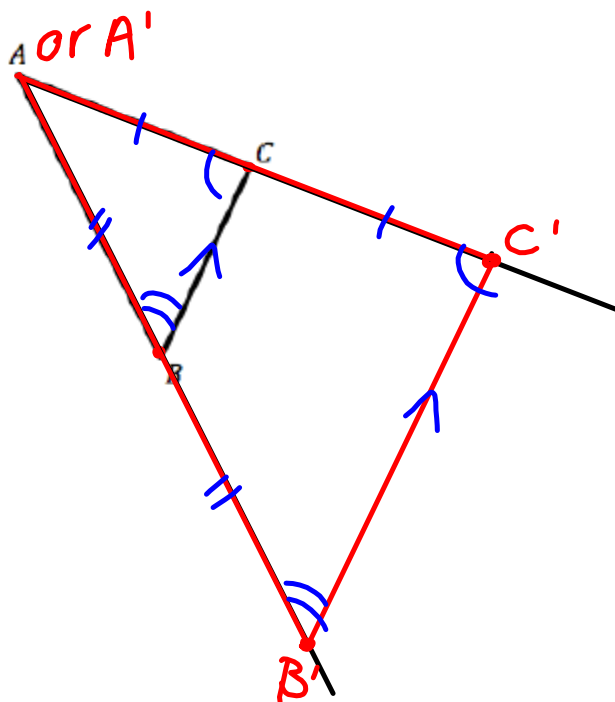
$$\frac{AB}{A'C'} = \frac{A'B'}{AC}$$

4. Based on your work above, under what conditions are the corresponding line segments in an image and its pre-image parallel after a dilation? That is, which word best completes this statement?

After a dilation, corresponding line segments in an image and its pre-image are [never, sometimes, always] parallel.

5. Give reasons for your answer. If you choose "sometimes", be very clear in your explanation how to tell when the corresponding line segments before and after the dilation are parallel and when they are not.

Given  $\triangle ABC$ , use point  $A$  as the center of a dilation to locate the vertices of a triangle that has side lengths that are twice as long as the sides of  $\triangle ABC$ .



$$BC = 25\text{cm}$$

$$B'C' = 50\text{cm}$$

6. Explain how the diagram you created above can be used to prove the following theorem:

The segment joining midpoints of two sides of a triangle is parallel to the third side and half the length.

$\overline{BC} \parallel \overline{B'C'}$  because 2 lines cut by a transversal have corresponding  $\angle$ s that are  $\cong$ . Also,  $BC = 25\text{cm}$  &  $B'C' = 50\text{cm}$ .

Home		Tools		SM2 - Unit 6 Outli...	
B: <del>2/17/2017</del> 2/22	6.2 Triangle Dilations	6.2 Ready, Set, Go (pgs.12-15)		Complete: _____	
A: 2/21/2017					
B: <del>2/22/2017</del> 2/24	6.3 Similar Triangles and Other Figures	6.3 Ready, Set, Go (pgs.20-21)		Complete: _____	
A: 2/23/2017					
B: <del>2/24/2017</del> 2/28	6.4 Cut by a Transversal	6.4 Ready, Set, Go (pgs.24-26)		Complete: _____	
A: 2/27/2017					
B: <del>2/28/2017</del> 3/1	6.5 Measured Reasoning	6.5 Ready, Set, Go (pgs.29-31)		Complete: _____	
A: 3/2/2017					
B: <del>3/1/2017</del>	6.1-6.5 Review Day *B day only	6.1-6.5 Review WK6		Complete: _____	
B: 3/6/2017	6.6 Yard Work in Segments	6.6 Ready, Set, Go (pgs.36-38)		Complete: _____	
A: 3/7/2017					
B: 3/8/2017	6.7 Pythagoras by Proportions	6.7 Ready, Set, Go (pgs.41-43)		Complete: _____	
A: 3/9/2017					
B: 3/10/2017	6.8 Are Relationships Predictable?	6.8 Ready, Set, Go (pgs.46-48)		Complete: _____	
A: 3/13/2017					
B: 3/14/2017	6.9 Relationships with Meaning	6.9 Ready, Set, Go (pgs.51-52)		Complete: _____	
A: 3/15/2017					
B: 3/16/2017	6.10 Finding the Value of a Relationship	6.10 Ready, Set, Go (pgs.55-56)		Complete: _____	

Homework

Finish 6.2 "Ready, Set, Go"