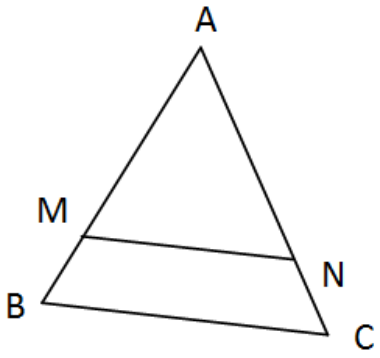
Name: _____

Proportions and Similar Triangles

Exercise 1: Given: $\overline{MN} \parallel \overline{BC}$ .Prove:

1) $\frac{BM}{BA} = \frac{CN}{CA}$

2) $\frac{AM}{AB} = \frac{AN}{AC}$

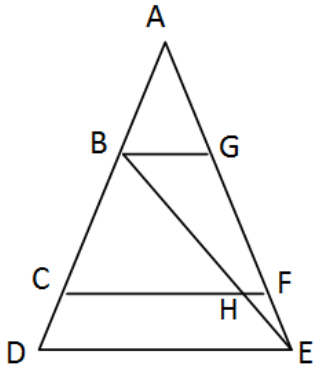


Exercise 2: Given: $BG \parallel CF \parallel DE$, $BD = 12$, $AE = 14$, $AB = 4$, $BH = \frac{3}{5}BE$

Find:

1) $AG, GF, and\ CD$

2) $\frac{HF}{BG}$



Exercise 3: A line is drawn parallel to the side $\overline{BC}$ of a triangle *ABC* cuts the sides $\overline{AB}$ and $\overline{AC}$ at *E* and *F* respectively. The parallel to $\overline{BF}$ drawn through *E* cuts $\overline{AC}$ at G. Prove that $\overline{AF}^2 = AG \times AC$.

Exercise 4: *ABC* is a triangle. Three parallel lines *AP*, *BQ*, and *CR* are drawn to meet $\overline{BC}$, $\overline{AC}$, and $\overline{AB}$ (produced if necessary) at *P*, *Q*, and *R* respectively.

Prove that: $\frac{BP}{PC} \times \frac{CQ}{QA} \times \frac{AR}{RB} = 1$