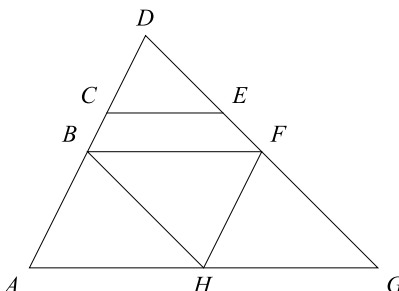# Handout 2: Baby, You're My Perfect Par-allel

Use the above figure for questions 1-5. Assume that $\overline{CE} \parallel \overline{BF} \parallel \overline{AG}$, $\overline{FH} \parallel \overline{DA}$, and $\overline{BH} \parallel \overline{DG}$.

1. Name all of the similar triangles in the figure.

2. If $\overline{AB} \cong \overline{BD}$ and $\overline{DF} \cong \overline{FG}$, then what is true about the relationship between $\overline{BF}$ and $\overline{AG}$?

3. If $DC = 4$, $CB = 6$, and $DE = 6$, what is the length of $\overline{DF}$?

4. If $GF = 12$, $FD = 21$, $GH = 20$, and $HA = 4x$, what is the value of x?

5. If $DB = 16$, $FG = 4$, and $BA = DF = y$, what is the value of y?

6. ΔABC has angles that measure 45° and 63°. ΔDEF has angles that measure 63° and 72°. Are the triangles similar?

7. In ΔGHI, $\angle G$ measures 39°, $GH = 12$, and $IG = 9$. In ΔJKL, $\angle L$ measures 39°, $KL = 24$, and $LJ = 32$. Are the triangles similar?

8. ΔYEA has sides that measure 12, 15, and 21. ΔNAY has sides that measure 20, 25, 36. Are the triangles similar?

9. In ΔTUV, $\angle T$ measures 117° and $\angle U$ measures 26°. In ΔWXY, $\angle X$ measures 37° and $\angle Y$ measures 117°. Area the triangles similar?

10. In ΔMNO, $\angle O$ measures 42°, $MN = 18$, and $NO = 12$. In ΔPQR, $\angle R$ measures 42°, $PQ = 9$, and $QR = 6$. Are the triangles similar?