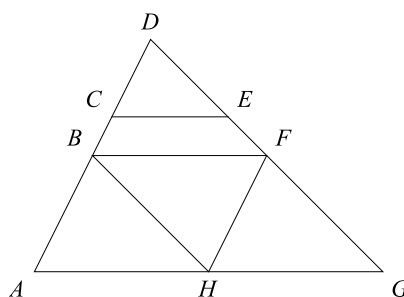# Handout 2: Baby, You're My Perfect Par-allel Answers

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.

   $\Delta DCE \sim \Delta DBF \sim \Delta DAG \sim \Delta FHG \sim \Delta BAH \sim \Delta HFB$.

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

   They are parallel, and $\overline{BF}$ is half the length of $\overline{AG}$.

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

   15.

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

   8.75.

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

   8.

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

   Yes, the triangles are 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?

   Yes, the triangles are similar.

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

   No, the triangles are not 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?

   Yes, the triangles are 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?

    There is not enough information to determine whether the triangles are similar.