Handout 3: The Grass is Always Greener On The Adjacent Side
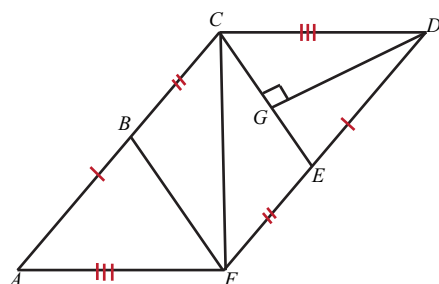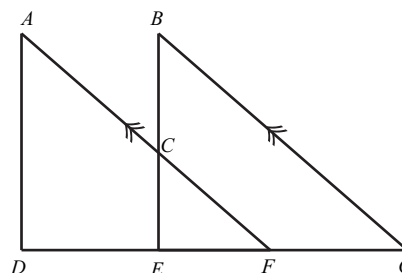

Figure 1

Figure 2

Use Figure 1 for questions 1-3.

1. Which rule of congruency can be used to prove that $\triangle ACF \cong \triangle DFC$, and why?

2. Given $\overline{DG}$ bisects $\angle CDE$. Which rule of congruency can be used to prove that $\triangle CDG \cong \triangle EDG$, and why?

3. Given $\overline{BC} \parallel \overline{EF}$ and $\overline{CE} \parallel \overline{FB}$. Which rule of congruency can be used to prove that $\triangle CEF \cong \triangle FBC$, and why?

Use Figure 2 for questions 4-10.

4. What allows us to say that $\angle ADF \cong \angle BEG$?

5. What allows us to say that $\overline{EF} \cong \overline{EF}$?

6. What allows us to say that $\overline{DE} + \overline{EF} \cong \overline{FG} + \overline{EF}$?

7. What allows us to say that $\overline{DE} + \overline{EF} \cong \overline{DF}$ and $\overline{FG} + \overline{EF} \cong \overline{EG}$?

8. What allows us to say that $\overline{DF} \cong \overline{EG}$?

9. What allows us to say that $\angle AFD \cong \angle BGE$?

10. What proves that $\triangle ADF$ and $\triangle BEG$ are congruent?

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