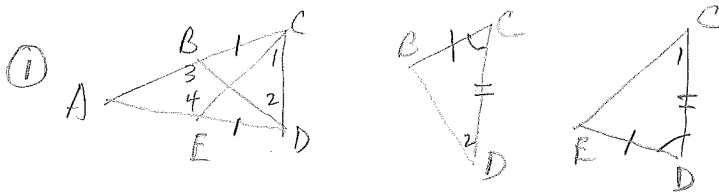
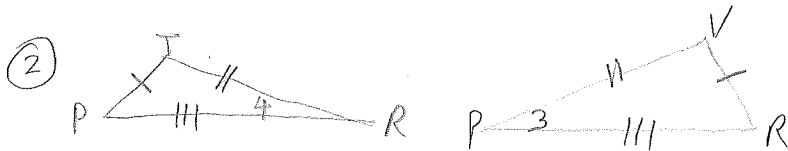


# Overlapping Triangles HW Answer Key



- ①  $\overline{BC} \cong \overline{ED}$   
 ②  $\angle ADC \cong \angle ACD$   
 ③  $\overline{CD} \cong \overline{CD}$  }  $\rightarrow$  ④  $\triangle BCD \cong \triangle EDC \rightarrow$  ⑤  $\overline{BD} \cong \overline{CE}$

- ① Given                      ④ SAS post.  
 ② Given                      ⑤ CPCTC  
 ③ Reflexive prop



- ①  $\overline{PT} \cong \overline{RV}$   
 $\overline{TR} \cong \overline{VR}$   
 ②  $\overline{PR} \cong \overline{PR}$  }  $\rightarrow$  ③  $\triangle PTR \cong \triangle RVP \rightarrow$  ④  $\angle QPR \cong \angle QRP \rightarrow$  ⑤  $\overline{PQ} \cong \overline{VR}$

⑥  $\triangle QPR$  isosceles

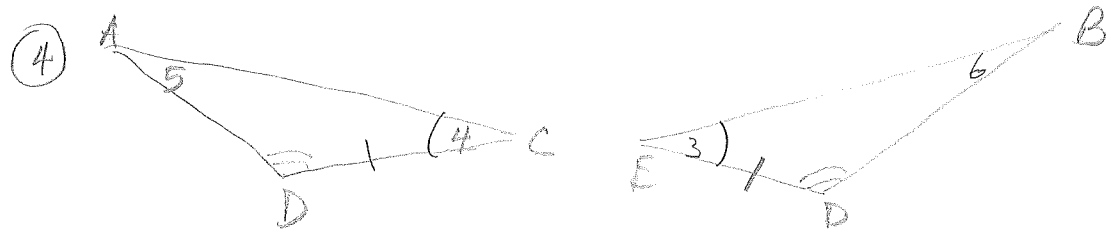
- ① Given                      ④ CPCTC  
 ② Reflexive Prop          ⑤ If 2  $\angle$ s  $\cong$ , sides opp  $\cong$ .  
 ③ SSS post.                  ⑥ Def. isosceles  $\triangle$ .

- ③ ①  $\angle STU$  &  $\angle STR$  linear pair  $\rightarrow$  ②  $\angle STU$  supp  $\angle STR$   
 $\angle VWR$  &  $\angle UWN$  linear pair  $\rightarrow$  ③  $\angle VWR$  supp  $\angle UWN$  }  $\rightarrow$  ⑤  $\angle STR \cong \angle VWR$   
 ④  $\angle STU \cong \angle VWR$   
 ⑥  $\overline{RS} \parallel \overline{VU} \rightarrow$  ⑦  $\angle R \cong \angle U$   
 ⑧  $\overline{TU} \cong \overline{RW} \rightarrow$  ⑨  $\overline{RT} \cong \overline{WU}$

⑩  $\triangle RST \cong \triangle UVW \rightarrow$  ⑪  $\overline{ST} \cong \overline{WV}$

### #3 Reasons

- |                           |   |
|---------------------------|---|
| ① Def of linear pair      | ⑦ 2 ll lines & transversal $\rightarrow$ alt. int. $\angle$ s $\cong$ . |
| ② linear pair Thm         |   |
| ③ $\downarrow$            | ⑧ Given   |
| ④ Given                   | ⑨ Common segment Thm  |
| ⑤ $\cong$ supplements Thm | ⑩ ASA post.   |
| ⑥ Given                   | ⑪ CPCTC   |



①  $\angle 1 \cong \angle 2 \rightarrow$  ②  $\triangle ADC \cong \triangle BDE$   
 ③  $\angle 3 \cong \angle 4$   
 $CD \cong ED$  }  $\rightarrow$  ④  $\triangle EBD \cong \triangle CAD \rightarrow$  ⑤  $\overline{EB} \cong \overline{CA}$

- |                    |             |
|--------------------|-------------|
| ① Given            | ④ SAS post. |
| ② Common Angle Thm | ⑤ CPCTC     |
| ③ Given            |             |



①  $\overline{AB} \cong \overline{DC} \rightarrow$  ②  $\overline{AC} \cong \overline{BD}$   
 ③  $\overline{AE} \cong \overline{BF}$   
 ④  $\angle A \cong \angle D$  }  $\rightarrow$  ⑤  $\triangle AEC \cong \triangle BFD \rightarrow$  ⑥  $\angle ECA \cong \angle FBD$

⑦  $\overline{BG} \cong \overline{CG} \rightarrow$  ⑧  $\triangle BCG$  isosceles.

- |                       |   |
|-----------------------|---|
| ① Given               | ⑤ SAS post.                                     |
| ② Common segments Thm | ⑥ CPCTC   |
| ③ Given               | ⑦ If 2 $\angle$ s $\cong$ , sides opp $\cong$ . |
| ④ Given               | ⑧ Def of isosceles $\triangle$ .                |