

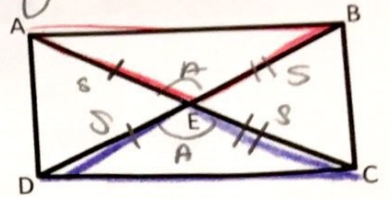
### 4.4 More Practice

Name Answer Key Period \_\_\_\_\_

Given:  $\triangle AED$  is isosceles with base  $\overline{AD}$

$\triangle BEC$  is isosceles with base  $\overline{BC}$

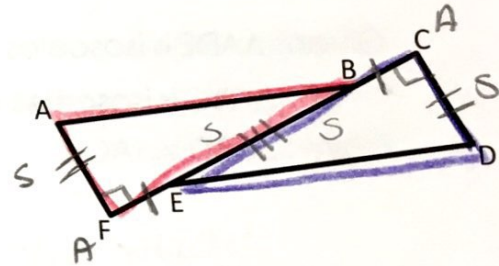
Prove:  $\triangle ABE \cong \triangle DCE$



| Statements   | Reasons   |
|--|---|
| ① $\triangle AED$ is isosceles w/ base $\overline{AD}$                       | ① GIVEN   |
| $\triangle BEC$ is isosceles w/ base $\overline{BC}$                         |   |
| ② $\overline{AE} \cong \overline{ED}$<br>$\overline{BE} \cong \overline{EC}$ | ② IF a $\triangle$ is isosceles, then it has 2 $\cong$ sides      |
| ③ $\angle AEB$ and $\angle DEC$ are vertical $\angle$ 's                     | ③ ASSUMED by diagram  |
| ④ $\angle AEB \cong \angle DEC$  | ④ IF 2 $\angle$ 's are vert. $\angle$ 's, then they are $\cong$ . |
| ⑤ $\triangle ABE \cong \triangle DCE$  | ⑤ SAS (2, 4, 2)   |

Given:  $\overline{AF} \perp \overline{FB}$ ,  $\overline{CD} \perp \overline{CE}$ ,  $\overline{FE} \cong \overline{BC}$ ,  $\overline{AF} \cong \overline{CD}$

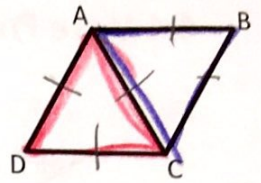
Prove:  $\triangle ABF \cong \triangle DEC$



| Statements   | Reasons  |
|--|--|
| ① $\overline{AF} \perp \overline{FB}$ ; $\overline{CD} \perp \overline{CE}$<br>$\overline{FE} \cong \overline{BC}$ ; $\overline{AF} \cong \overline{CD}$ | ① GIVEN  |
| ② $\angle F$ and $\angle C$ are right $\angle$ 's  | ② IF segs are $\perp$ , then it forms right $\angle$ 's.                     |
| ③ $\angle F \cong \angle C$  | ③ IF $\angle$ 's are right $\angle$ 's, then they are $\cong$ .              |
| ④ $\overline{BE} \cong \overline{BE}$  | ④ REFLEXIVE POC  |
| ⑤ $\overline{AB} \cong \overline{EC}$  | ⑤ IF 2 $\cong$ seg are added to 2 $\cong$ segs, then, the sums are $\cong$ . |
| ⑥ $\triangle ABF \cong \triangle DEC$  | ⑥ SAS (1, 3, 5)  |

Given:  $\triangle ABC$  and  $\triangle ACD$  are equilateral triangles

Prove:  $\triangle ABC \cong \triangle CDA$

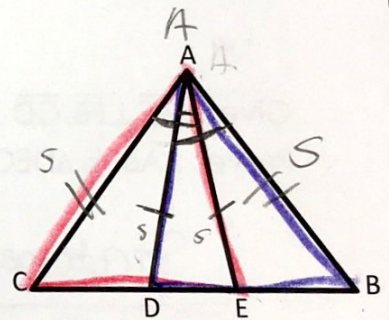


| Statements   | Reasons  |
|--|--|
| ① $\triangle ABC$ and $\triangle ACD$ are equilateral $\triangle$ s  | ① Given  |
| ② $\overline{AB} \cong \overline{BC} \cong \overline{AC}$<br>$\overline{DC} \cong \overline{AD} \cong \overline{AC}$ | ② If a triangle is an equilateral triangle, then all sides are $\cong$ . |
| ③ $\overline{AC} \cong \overline{AC}$  | ③ Reflexive POC  |
| ④ $\overline{AD} \cong \overline{BC}$  | ④ Substitution POC   |
| ⑤ $\overline{AB} \cong \overline{CD}$  | ⑤ Substitution POC   |
| ⑥ $\triangle ABC \cong \triangle CDA$  | ⑥ SSS (3, 4, 5)  |

Given:  $\triangle ADE$  is isosceles with base  $\overline{DE}$ ,

$\triangle ABC$  is isosceles with base  $\overline{CB}$ ,  $\angle CAD \cong \angle BAE$

Prove:  $\triangle ABD \cong \triangle ACE$



| Statements  | Reasons  |
|---|--|
| ① $\triangle ADE$ is isosc. w/ base $\overline{DE}$<br>$\triangle ABC$ is isosc. w/ base $\overline{CB}$<br>$\angle CAD \cong \angle BAE$ | ① Given  |
| ② $\overline{AD} \cong \overline{AE}$<br>$\overline{AC} \cong \overline{AB}$  | ② If a $\triangle$ is an isos. $\triangle$ , then 2 sides are $\cong$ .            |
| ③ $\angle DAE \cong \angle DAE$   | ③ Reflexive POC  |
| ④ $\angle CAE \cong \angle BAD$   | ④ If $2 \cong \angle$ 's are added to $2 \cong$ angles then the sums are $\cong$ . |
| ⑤ $\triangle ABD \cong \triangle ACE$   | ⑤ SAS (2, 4, 2)  |

Overlapping!