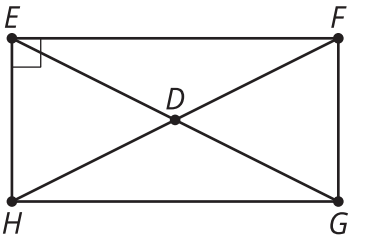
Lesson 12 Practice Problems

1. Lin is using the diagram to prove the statement, "If a parallelogram has one right angle, it is a rectangle." Given that $EFGH$ is a parallelogram and angle HEF is right, which reasoning about angles will help her prove that angle FGH is also a right angle?



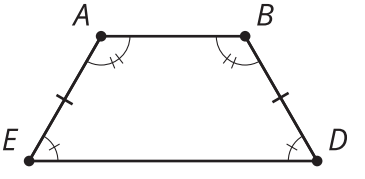
   A. Corresponding angles are congruent when parallel lines are cut by a transversal.

   B. Opposite angles in a parallelogram are congruent.

   C. Vertical angles are congruent.

   D. The base angles of an isosceles triangle are congruent.

2. $ABDE$ is an isosceles trapezoid. Select **all** pairs of congruent triangles.



   A. Triangle ABE and triangle DBE

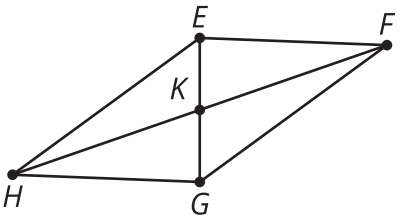
   B. Triangle ABD and triangle DAE

   C. Triangle ABE and triangle BAD

   D. Triangle AED and triangle BDE

   E. Triangle EAB and triangle EDB

3. Match each conjecture with the rephrased statement of proof connected to the diagram.



A. The diagonals of a parallelogram bisect each other.

B. In a parallelogram, opposite sides are congruent.

C. A quadrilateral with opposite sides congruent is a parallelogram.

D. If the diagonals of a quadrilateral bisect each other, then it is a parallelogram.

1. In quadrilateral $EFGH$ with GH congruent to FE and EH congruent to FG, show $EFGH$ is a parallelogram.

2. In parallelogram $EFGH$, show GH is congruent to FE and EH congruent to FG.

3. In quadrilateral $EFGH$ with EK congruent to KG and FK congruent to KH, show $EFGH$ is a parallelogram.

4. In parallelogram $EFGH$, show EK is congruent to KG and FK congruent to KH.

4. Which of the following criteria *always* proves triangles congruent? Select **all** that apply.

A. Corresponding congruent Angle-Side-Angle

B. Corresponding congruent Side-Angle-Side

C. Corresponding congruent Side-Side-Angle

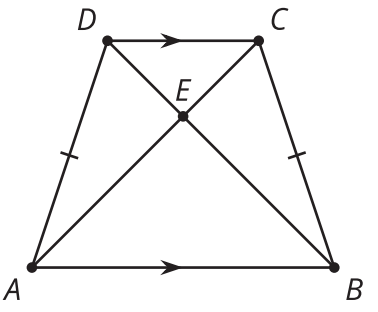
D. 3 congruent sides

E. 2 congruent sides

F. 3 congruent angles

(From Unit 2, Lesson 11.)

5. Select **all** true statements based on the diagram.



A. Segment EB is congruent to segment AD.

B. Segment DC is congruent to segment AB.

C. Segment DA is congruent to segment CB.

D. Angle CBE is congruent to angle ABE.

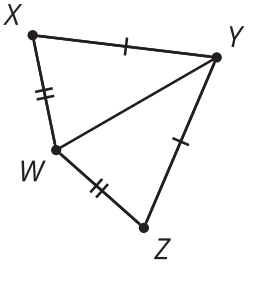
E. Angle CEB is congruent to angle DEA.

F. Line DA is parallel to line CB.

G. Line DC is parallel to line AB.

(From Unit 2, Lesson 10.)

6. Diego states that diagonal WY bisects angles ZWX and ZYX. Is he correct? Explain your reasoning.



(From Unit 2, Lesson 9.)

7. Sketch the unique triangles that can be made with angle measures 80° and 20° and side length 5. How do you know you have sketched all possibilities?

(From Unit 2, Lesson 4.)