Lesson 14 Practice Problems

1. Select **all** quadrilaterals for which a diagonal is also a line of symmetry.

   A. trapezoid

   B. isosceles trapezoid

   C. parallelogram

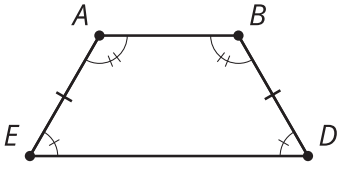
   D. rhombus

   E. rectangle

   F. square

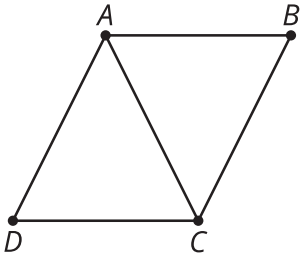
2. Show that diagonal EG is a line of symmetry for rhombus $EFGH$.

3. $ABDE$ is an isosceles trapezoid. Priya makes a claim that triangle AEB is congruent to triangle DBE. Convince Priya this is not true.



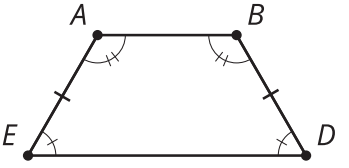
(From Unit 2, Lesson 13.)

4. In quadrilateral $ABCD$, triangle ADC is congruent to CBA. Show that $ABCD$ is a parallelogram.



(From Unit 2, Lesson 13.)

5. Priya is convinced the diagonals of the isosceles trapezoid are congruent. She knows that if she can prove triangles congruent that include the diagonals, then she will show that diagonals are also congruent. Help her complete the proof.



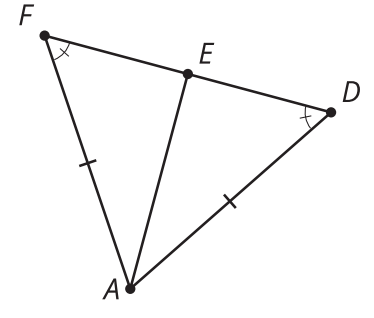
$ABDE$ is an isosceles trapezoid.

Draw auxiliary lines that are diagonals __1__ and __2__. AB is congruent to __3__ because they are the same segment. We know angle B and __4__ are congruent. We know AE is congruent to __5__. Therefore, triangle ABE and __6__ are congruent because of __7__. Finally, diagonal BE is congruent to __8__ because __9__.

(From Unit 2, Lesson 12.)

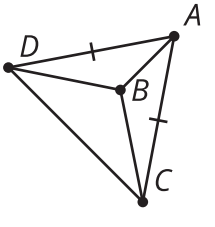
6. Is triangle AFE congruent to triangle ADE? Explain your reasoning.

$\overline{AF} \cong \overline{AD}, \angle F \cong \angle D$



(From Unit 2, Lesson 11.)

7. Triangle DAC is isosceles with congruent sides AD and AC. Which additional given information is sufficient for showing that triangle DBC is isosceles? Select **all** that apply.



A. Segment DB is congruent to segment BC.

B. Segment AB is congruent to segment BD.

C. Angle ABD is congruent to angle ABC.

D. Angle ADC is congruent to angle ACD.

E. AB is an angle bisector of DAC.

F. Triangle BDA is congruent to triangle BDC.

(From Unit 2, Lesson 6.)