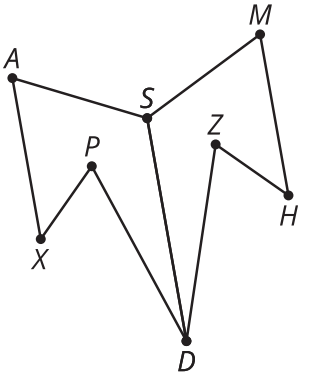
Lesson 2 Practice Problems

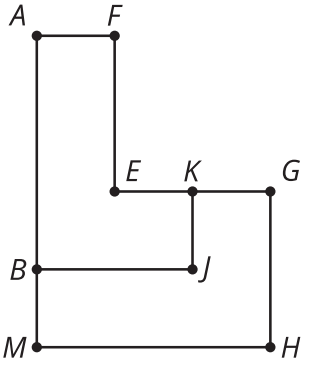
1. Line SD is a line of symmetry for figure $AXPDZHMS$. Noah says that $AXPDS$ is congruent to $HMZDS$ because sides AX and HM are corresponding.



   a. Why is Noah's congruence statement incorrect?

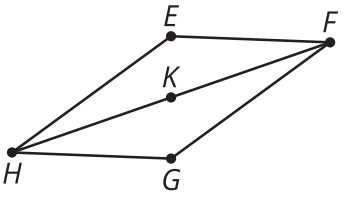
   b. Write a correct congruence statement for the pentagons.

2. FIgure $MBJKGH$ is the image of figure $AFEKJB$ after being rotated 90 degrees counterclockwise about point K. Draw a segment in figure $AFEKJB$ to create a quadrilateral. Draw the image of the segment when rotated 90 degrees counterclockwise about point K.



   Write a congruence statement for the quadrilateral you created in figure $AFEKJB$ and the image of the quadrilateral in figure $MBJKGH$.

3. Triangle HEF is the image of triangle FGH after a 180 degree rotation about point K. Select **all** statements that must be true.



A. Triangle FGH is congruent to triangle FEH.

B. Triangle EFH is congruent to triangle GFH.

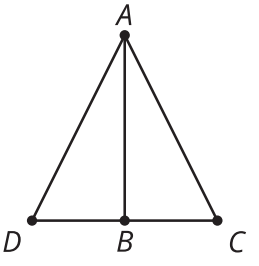
C. Angle KHE is congruent to angle KFG.

D. Angle GHK is congruent to angle KHE.

E. Segment EH is congruent to segment FG.

F. Segment GH is congruent to segment EF.

4. When triangle ABC is reflected across line AB, the image is triangle ABD. Why are segment AD and segment AC congruent?



A. Congruent parts of congruent figures are corresponding.

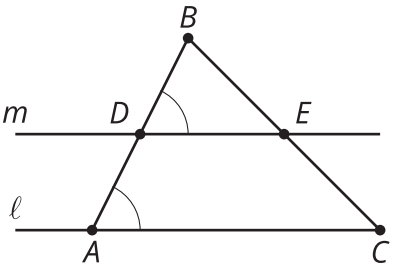
B. Corresponding parts of congruent figures are congruent.

C. An isosceles triangle has a pair of congruent sides.

D. Segment AB is a perpendicular bisector of segment DC.

(From Unit 2, Lesson 1.)

5. Elena needs to prove angles BED and BCA are congruent. Provide reasons to support each of her statements.

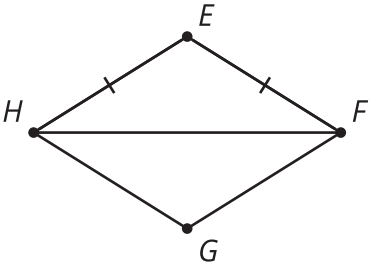


   a. Line m is parallel to line l.

   b. Angles BED and BCA are congruent.

(From Unit 1, Lesson 20.)

6. Triangle FGH is the image of isosceles triangle FEH after a reflection across line HF. Select **all** the statements that are a result of corresponding parts of congruent triangles being congruent.



   A. $EFGH$ is a rectangle.

   B. $EFGH$ is a rhombus.

   C. Diagonal FH bisects angles EFG and EHG.

   D. Diagonal FH is perpendicular to side FE.

   E. Angle EHF is congruent to angle FGH.

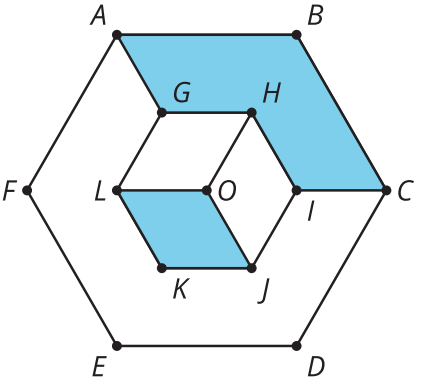
   F. Angle FEH is congruent to angle FGH.

(From Unit 2, Lesson 1.)

7. This design began from the construction of a regular hexagon.

   a. Draw 1 segment so the diagram has another hexagon that is congruent to hexagon $ABCIHG$.

   b. Explain why the hexagons are congruent.



(From Unit 1, Lesson 22.)