Lessons 4.5–4.8
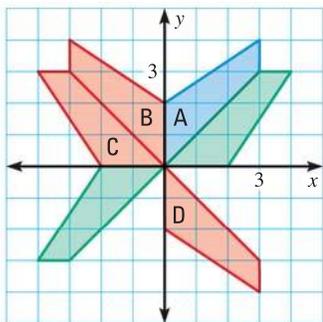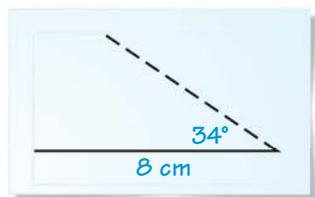
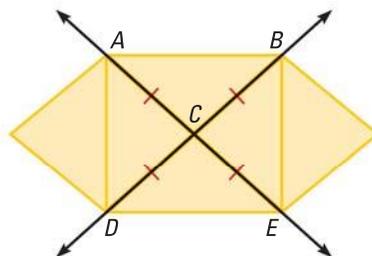**1. MULTI-STEP PROBLEM** Use the quilt pattern shown below.
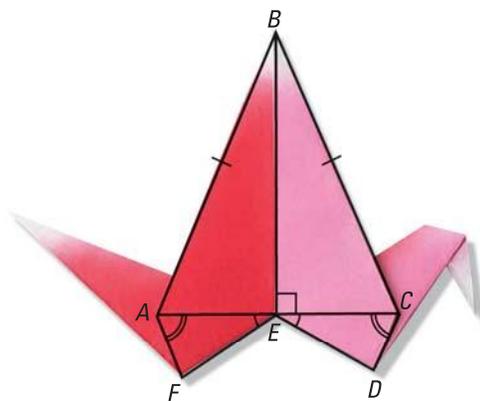

a. Figure B is the image of Figure A. Name and *describe* the transformation.

b. Figure C is the image of Figure A. Name and *describe* the transformation.

c. Figure D is the image of Figure A. Name and *describe* the transformation.

d. *Explain* how you could complete the quilt pattern using transformations of Figure A.

2. SHORT RESPONSE You are told that a triangle has sides that are 5 centimeters and 3 centimeters long. You are also told that the side that is 5 centimeters long forms an angle with the third side that measures 28°. Is there only one triangle that has these given dimensions? *Explain* why or why not.

3. OPEN-ENDED A friend has drawn a triangle on a piece of paper and she is describing the triangle so that you can draw one that is congruent to hers. So far, she has told you that the length of one side is 8 centimeters and one of the angles formed with this side is 34°. *Describe* three pieces of additional information you could use to construct the triangle.

4. SHORT RESPONSE Can the triangles *ACD* and *BCE* be proven congruent using the information given in the diagram? Can you show that $\overline{AD} \cong \overline{BE}$? *Explain*.

5. EXTENDED RESPONSE Use the information given in the diagram to prove the statements below.

a. Prove that $\angle BCE \cong \angle BAE$.

b. Prove that $\overline{AF} \cong \overline{CD}$.

6. GRIDDED ANSWER Find the value of *x* in the diagram.

(4*x* + 17) in.   45 in.