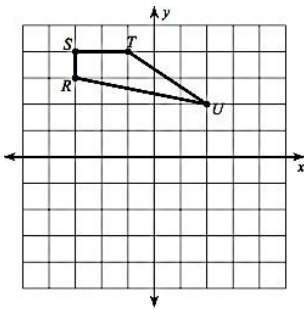# 11E PROVE IT! Congruence

Name: _____ Per: _____

SHOW YOUR WORK AND WORK IN PENCIL
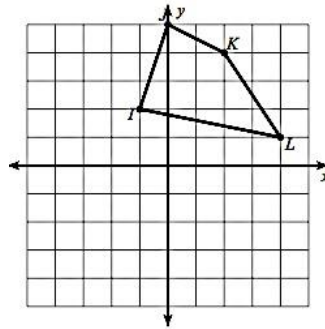
Find the **perimeter** AND **area** of the following images. Show your work for each side length. Give exact AND estimate to the nearest 10th.
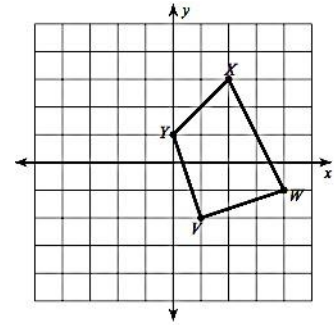
1.

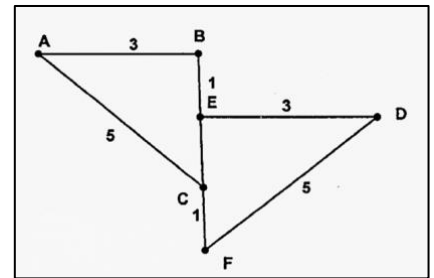2.

3.

a. Perimeter:

   Exact:

   Estimate:

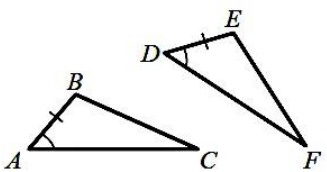b. Area:

a. Perimeter:

   Exact:

   Estimate:

b. Area:

a. Perimeter:

   Exact:

   Estimate:

b. Area:

4. Determine whether $\Delta ABC \cong \Delta DEF$. Give detailed explanation of why or why not.
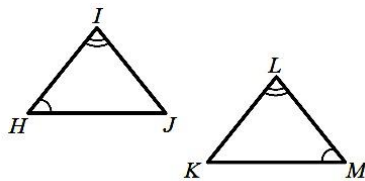
State what additional information is required to know that the triangles are congruent for the reason given.
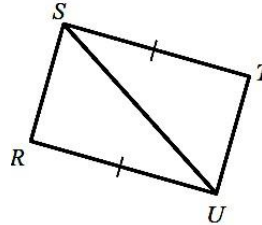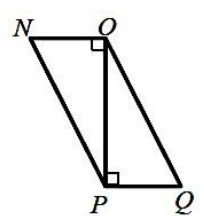
| 5. ASA	6. AAS	7. SSS	8. SAS

9. State if the following side lengths will make a triangle or not. EXPLAIN.
   a. $10cm, 3cm$ and $6cm$ b. $8.1in, 9in$ and $1in$ c. $1ft, 13in$ and $2ft$

10. Find the **perimeter and area** of the triangle with the following coordinate points. Show your work
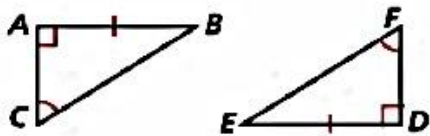 $L(-3,1), M(1,-1)$, and $N(-5,-3)$
    a. Perimeter: b. Area

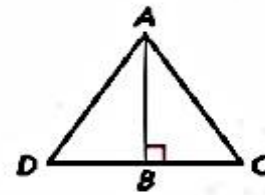11. State if the two triangles are congruent. If they are, state by which theorem. If not, explain why.
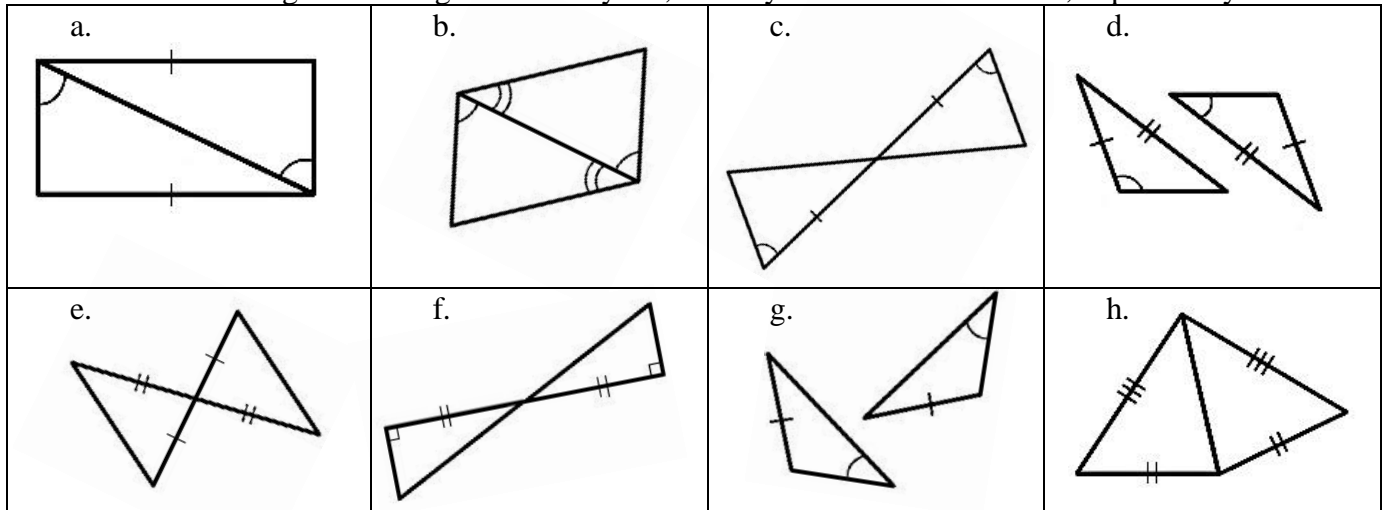
a.	b.	c.	d.
e.	f.	g.	h.

Prove the following by using a two-column proof.

12. Given: $\overline{AB} \cong \overline{DE}$, $\angle C \cong \angle F$
    Prove: $\triangle ABC \cong \triangle DEF$

13. Given: B is the midpoint of $\overline{DC}$, $\overline{AB} \perp \overline{DC}$
    Prove: $\triangle ABD \cong \triangle ABC$

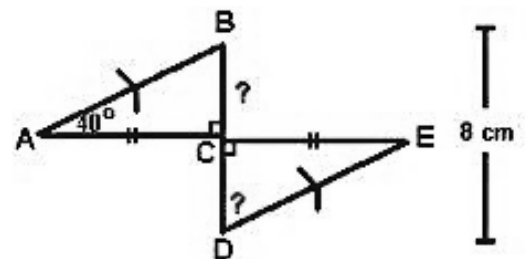| Statement	Reason
	Given
	Given

Statement	Reason
	Given
	Given

14. First prove that the triangles are congruent and then with CPCTC (Corresponding Parts of Congruent Triangles are Congruent) find the side length and angle asked. Use as many lines as needed

a. Find $\overline{BC}$

b. Find $\angle D$

Statement	Reason
	Given

15. How many solutions does the following system have? $\begin{cases} 3(2x + 6) = 50 - y \\ 4x + y = 42 - 2x \end{cases}$

Number of solutions: _____ EXPLAIN _____