

Name: _____

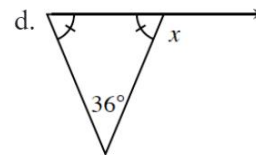
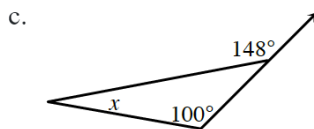
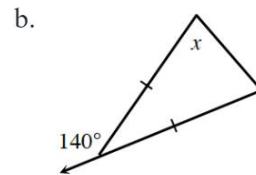
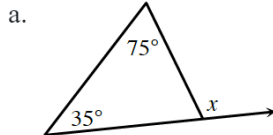
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Homework 2.1.3

1. Write a converse for each conditional statement below. Then, assuming the original statement is true, decide if the converse must be true or not.

- a. If it rains, then the ground is wet.
- b. If a polygon is a square, then it is a rectangle.
- c. If a polygon is a rectangle, then it has four 90° angles.
- d. If a polygon has three angles, it is a triangle.
- e. If two lines intersect, then vertical angles are congruent.

2. Solve for x in each diagram below.



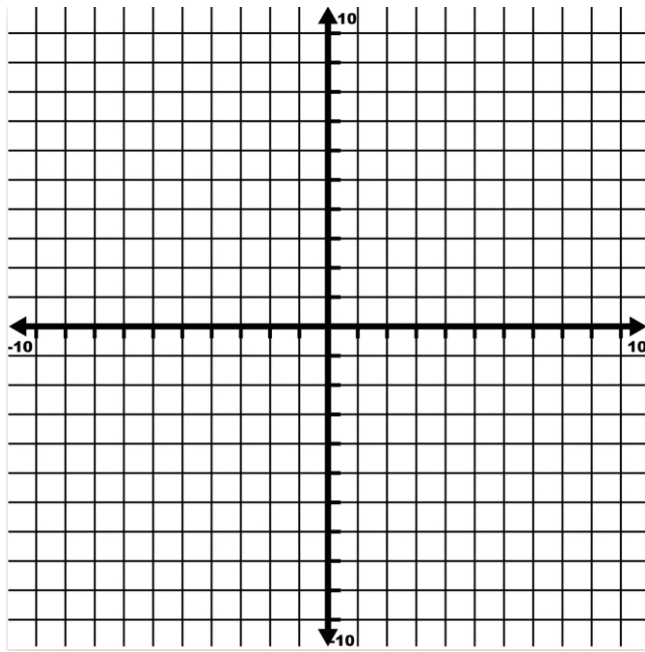
3. The set of equations below is an example of a **system of equations**.

$$y = -x + 1$$

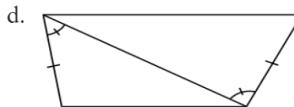
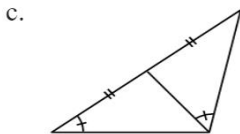
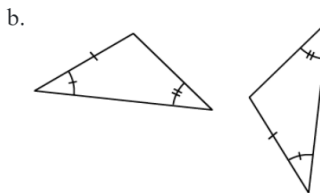
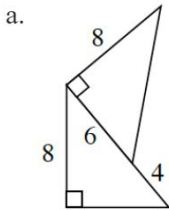
$$y = 2x + 7$$

- a. solve the system using an algebraic method of your choice.

- b. Graph the system on graph paper. Then write its solution (the point of intersection) in (x,y) form. Did your solution match your result from part (a)? If not, check your work carefully and look for any mistakes in your algebraic process or on your graph.



4. Determine whether or not the triangles in each pair below are congruent. Justify your conclusion with a triangle congruence theorem.



5. Solve the Diamond Problems below.

