**4-6.** Use what you know about the angles of a triangle to find the value of *x* and the angles in each triangle below.

1. 
2. 
3. 
4. 

**4-7.** Use the triangles at the right to answer the following questions.

1. Are the triangles at right similar? How do you know? Show your **reasoning** in a flowchart.
2. **Examine** your work from part (a). Are the triangles also congruent? Explain why or why not.

**4-8.** As Randi started to solve for *x* in the diagram at right, she wrote the equation 72 + *x*2 = (*x* + 1)2 .

1. Is Randi’s equation valid? Explain your thinking.
2. To solve her equation, first rewrite (*x* + 1)2 by multiplying (*x* + 1)(*x* + 1). You may want to review the Math Notes box for Lesson 2.2.2.
3. Now solve your equation for *x*.
4. What is the perimeter of Randi’s triangle?

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**4-9.** Assume that the shapes at the right are similar. Find the values of *x*, *y*, and *z*.

**4-10.** Are the lines represented by the equations below parallel? Support your **reasoning** with convincing evidence.

