Identifying Similar Figures & Solving For Missing Measurements

Recall for polygons to be similar they must meet the following criteria:

1. Corresponding angles are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
2. Corresponding sides are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

**\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* IMPORTANT \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\***

If two angles of one triangle are congruent to two angles of another triangle,

then \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

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| **Use what you know about similar figures to identify which figures below are similar. Explain your thinking.** | |
| 1.  8  8  10  10 | 2.  **8**  **Q**  **6**  **5**  **D**  **S**  **R**  **12**  **B**  **A**  **P**  **C** |
| 3.  70  65  30  30 | 4.  **Q**  **3**  **1.5**  **D**  **S**  **R**  **7.5**  **B**  **A**  **P**  **C**  **15** |
| 5. Ann’s rectangular room is 10 ft by 12 ft 6 in. She draws a rectangular sketch of her room 8 in by 10 in. Is Ann’s sketch similar to her actual room? | |
| 6. The school’s rectangular football field is 20 ft by 50 ft. If we draw a rectangular sketch of the field 4 in by 10 in. Is the sketch similar to the actual field? | |

Knowing the following figures are similar, use proportional reasoning to find the missing measurement.

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| Example: Rectangles ABCD and PQRS are similar. Find x.  1) Set up a proportion 🡪  2) Substitute in values 🡪  3) Cross multiply 🡪  4) Solve the equation 🡪  **8**  **B**  **A**  **Q**  **R**  **12**  **x**  **6**  **P**  **S**  **C**  **D** |

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The following figures are similar. Solve for the designated side.

1)

2)

**6**

**q**

**4**

**5**

**5**

**8**

**3**

**y**

Each figure shows a pair of similar triangles. Find each unknown length.

4)

3)

35 35 10.2

m

x

3.4

1.6

y

21

3

n

48

p

Centimeter graph paper