Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Table #: \_\_\_\_\_\_\_ Period: \_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_

**3.4A NOTES – Application Problems Using Similar Triangles**

*Objective: Use indirect measurement to find missing measurements of similar triangles. CC.SS.8.G.5*

*HW: 3.4A Homework (handout)*

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| (Review):  The triangles are similar. Find x. | Warm Up #1.  The triangles are similar. Find x. |

Examples 1 and 2 show similar triangles. Write proportions to solve unknown measurements.

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| **Example 1:**  Find the height of the giraffe in the diagram below. The person in the diagram is 5.5 feet tall.    ANSWER: \_\_\_\_\_\_\_\_\_\_\_\_\_ |
| **Example 2:**  On level ground, the base of a tree is 20 ft from the bottom of a 48-ft flagpole. The tree is shorter than the pole. At a certain time, their shadows end at the same point 60 ft from the base of the flagpole. How tall is the tree? Hint: draw two triangles and label again.  ANSWER: \_\_\_\_\_\_\_\_\_\_\_\_\_ |
| **Example 3 (Similar Test Question #20):**  A 5-foot tall pole creates a shadow that is 4 feet long. At the same time, a road sign creates a shadow that is 10 feet long. How tall is the road sign? HINT: Draw a picture  ANSWER: \_\_\_\_\_\_\_\_\_\_\_\_ |

**BACK 🡪**

**ON YOUR OWN**

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| 1. If a tree casts a 24-foot shadow at the same time that a yardstick casts a 2-foot shadow, find the height of the tree.   3 ft  2 ft  24 ft  x ft  ANSWER: \_\_\_\_\_\_\_\_\_\_\_\_\_ |
| 1. Triangle ABC is similar to triangle DEC. Use what you know about corresponding sides of similar triangles to find the height of the tree. HINT: Write a proportion.     ANSWER: \_\_\_\_\_\_\_\_\_\_\_\_\_ |
| 1. Ramon places a mirror on the ground 45 ft from the base of a geyser. He walks backward until he can see the top of the geyser in the middle of the mirror. At that point, Ramon’s eyes are 6 ft above the ground and he is 7.5 ft from the mirror. Use similar triangles to find the height of the geyser.   **x ft**  **45 ft**  **7.5 ft**  **6 ft**  ANSWER: \_\_\_\_\_\_\_\_\_\_\_\_\_ |
| 1. A hedge is sighted on the other side of a canyon. Find the width of the canyon.   100 ft  10 ft  7.5 ft  x  ANSWER: \_\_\_\_\_\_\_\_\_\_\_\_\_ |