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 ft2 ft24 ftx ftANSWER: \_\_\_\_\_\_\_\_\_\_\_\_\_ |
| 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 ft10 ft7.5 ftxANSWER: \_\_\_\_\_\_\_\_\_\_\_\_\_ |