**Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Per.\_\_\_\_\_\_\_ Score:\_\_\_\_\_**

### U15 HWK #2 *The Pythagorean Theorem and Unknown Side Lengths*

**Directions:** Two side lengths of a right triangle have been given. Solve for the missing side length if *a* and *b* are leg lengths and *c* is the length of the hypotenuse. Leave your answer in simplest radical form.

1. *a* = 16, *b* = 30, *c =* ?
2. *a* = 2, *b* = 2, *c =* ?
3. *a* = 40, *b* = ?, *c* = 50
4. *a* = ?, *b =* $4\sqrt{3}$, *c* = 8

**Directions:** Find the value of *x* using the Pythagorean Theorem. Leave your answer in simplest radical form.

|  |  |
| --- | --- |
| 1.

*x* = \_\_\_\_\_\_\_ | 1.

*x* = \_\_\_\_\_\_ |
| 1.

*x* = \_\_\_\_\_\_\_ | 1.

*x* = \_\_\_\_\_\_\_  |
| *x* = \_\_\_\_\_\_\_ | 1.

*x* = \_\_\_\_\_\_\_ |
| 1.

*x* = \_\_\_\_\_\_ | 1.

*x* = \_\_\_\_\_\_\_ |
| 1.

*x* = \_\_\_\_\_\_\_ | 1.

*x* = \_\_\_\_\_\_\_ |

**Higher Level Thinking Required!!** Use the picture below to answer questions a) and b).



1. Find all the missing side lengths and label the picture with the answers.
2. Using the picture above, devise a strategy for constructing a segment with a length of $\sqrt{5}$. Explain your strategy below.