

Name: \_\_\_\_\_ Class Period \_\_\_\_\_ Date: \_\_\_\_\_

Work with a partner. Write your partner's name here: \_\_\_\_\_

Using the Pythagorean Theorem, you can measure objects indirectly. If you know the measures of two sides of a right triangle, you can easily calculate the measure of the unknown side. Follow the steps below to find your partner's sitting height using the Pythagorean Theorem.

1. Have your partner sit on the floor, with one hip exactly on a floor tile line. Have your partner hold the tape measure against the top center of his/her head. You hold the other end of the tape measure (use inches), and place the tape measure on the floor exactly two full tiles away from your partner's hip. Record the distance under "c" in the table below.
2. Use the tape measure to measure the width of two tiles. Record this distance under "a" in the table below. Again, measure in inches.

a	c	$a^2$	$c^2$

3. Now, subtract  $c^2$  minus  $a^2$  and write your answer here \_\_\_\_\_
4. Use a calculator to find the square root of your answer in number 3. This is your partner's sitting height. Write your answer here \_\_\_\_\_
5. Now, use the tape measure to measure your partner's sitting height from the floor to the top of their head. Compare this measurement to your answer in problem 4 above. Are the two values close---yes or no. \_\_\_\_\_ If not, what might account for the difference?  
\_\_\_\_\_  
\_\_\_\_\_

6. Switch places and repeat the process.