Unit: Pythagorean Theorem
Student Handout 2

Name _____

Date _____Pd_____

PYTHAGOREAN THEOREM CONVERSE

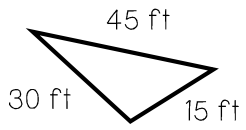
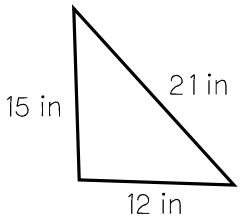
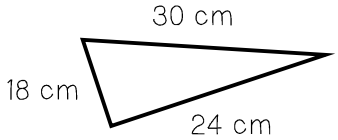
The converse of a statement switches the order of "if" and "then" in the statement. Use this to write the converse of the following statement as an example:

STATEMENT	CONVERSE
If a triangle has three equal sides, then it is an equilateral triangle.	

PYTHAGOREAN THEOREM CONVERSE

- We know that if a triangle is a right triangle, then _____. Apply the practice from above to write the converse of the Pythagorean theorem:
- The converse can be used to prove whether a triangle is a _____ triangle.

In 1-3, use the Pythagorean converse to prove whether the given triangle is a right triangle. Show all work in the first column. Then, write "yes" or "no" and justify your choice in the last column.

	WORK	RIGHT TRIANGLE? JUSTIFY.
1 		
2 		
3 		

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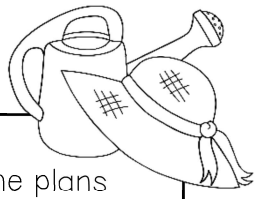
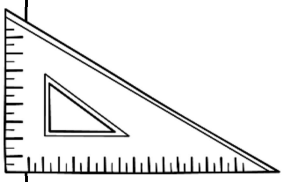
4. Determine if the following side lengths could form a right triangle. Justify your choice.

SIDE LENGTHS	WORK	RIGHT TRIANGLE? JUSTIFY.
12, 24, 36		
16, 9, 11		
20, 29, 21		
12.5, 7.5, 10		



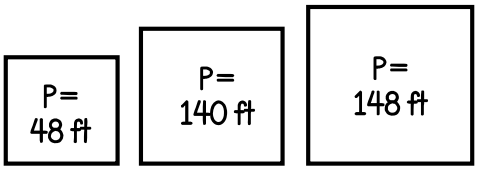
Use the Pythagorean converse to help you answer questions 5-7.

5. Jimmy thinks a window frame in his house looks slanted because the corner doesn't appear to be a 90° angle. His wife disagrees. They measured the window and found the width to be 25 inches, the height to be 36 inches, and the diagonal distance to be 45 inches. Who is correct?



6. Patty wants a triangular garden in her backyard to grow vegetables. She plans to use three pieces of edging that measure 7 feet, 10 feet and 8 feet. Will her garden be in the shape of a right triangle? Why or why not?

7. The perimeters of three squares are shown below. Could the three squares be positioned so that they meet to form a right triangle? Why or why not?



Summarize today's lesson:

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Homework 2

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PYTHAGOREAN THEOREM CONVERSE

In questions 1-6, write "yes" or "no" to state whether the given side lengths would form a right triangle. Show work to support your answers.

1. 28, 53, 45 _____

2. 4.5, 6, 7.5 _____

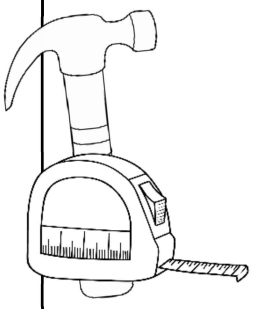
3. 20, 40, 30 _____

4. 50, 48, 14 _____

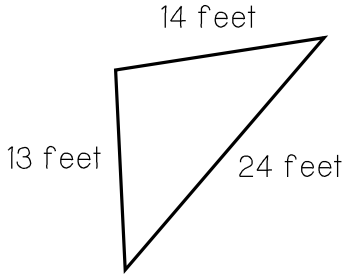
5. 1, 2, 5 _____

6. 25, 16, 12 _____

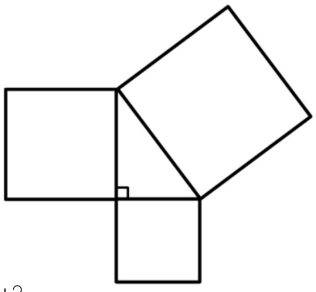
7. Tina built a triangular sign with side lengths of 73 inches, 55 inches and 4 feet. Is the sign a right triangle? Why or why not?



8. Is the triangle shown a right triangle? How do you know?

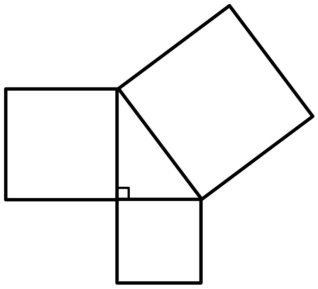


9. Which of the following could be the areas of the three squares below?



A. 12 ft^2, 16 ft^2 and 28 ft^2
B. 8 ft^2, 16 ft^2 and 24 ft^2
C. Both A and B
D. Neither A nor B

10. Which of the following could be the perimeters of the three squares below?



A. 12 ft, 16 ft and 20 ft
B. 20 ft, 16 ft and 24 ft
C. Both A and B
D. Neither A nor B

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