

# INTRODUCTION - PYTHAGOREAN THEOREM

NAME \_\_\_\_\_



THE PYTHAGOREAN THEOREM IS A KEY RESULT FROM EUCLIDEAN GEOMETRY. IT STATES THAT IN A RIGHT-ANGLED TRIANGLE, THE SQUARE OF THE LENGTH OF THE HYPOTENUSE IS EQUAL TO THE SUM OF THE SQUARES OF THE LENGTHS OF THE OTHER TWO SIDES.



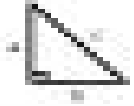
IF YOU KNOW ANY TWO SIDES OF A RIGHT-ANGLED TRIANGLE, YOU CAN FIND THE LENGTH OF THE THIRD SIDE USING THE PYTHAGOREAN THEOREM.

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**PYTHAGOREAN THEOREM**  
 $a^2 + b^2 = c^2$

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**PYTHAGOREAN THEOREM**  
 $a^2 + b^2 = c^2$



$a^2 + b^2 = c^2$   
 $a^2 + 3^2 = 5^2$   
 $a^2 + 9 = 25$   
 $a^2 = 25 - 9$   
 $a^2 = 16$   
 $a = 4$

IF YOU KNOW ANY TWO SIDES OF A RIGHT-ANGLED TRIANGLE, YOU CAN FIND THE LENGTH OF THE THIRD SIDE USING THE PYTHAGOREAN THEOREM.



$a^2 + b^2 = c^2$      $a^2 + 4^2 = 5^2$   
 $a^2 + 16 = 25$   
 $a^2 = 25 - 16$   
 $a^2 = 9$   
 $a = 3$

IF YOU KNOW ANY TWO SIDES OF A RIGHT-ANGLED TRIANGLE, YOU CAN FIND THE LENGTH OF THE THIRD SIDE USING THE PYTHAGOREAN THEOREM.

Now your turn. Find the missing side for each right triangle.

