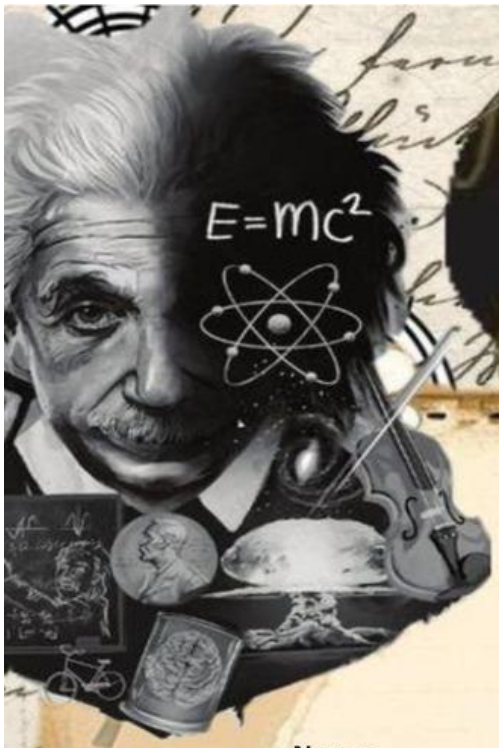


STUDENT WORKSHEET (LKPD)

Pythagorean Theorem

Name: _____

Group: _____

Class: _____

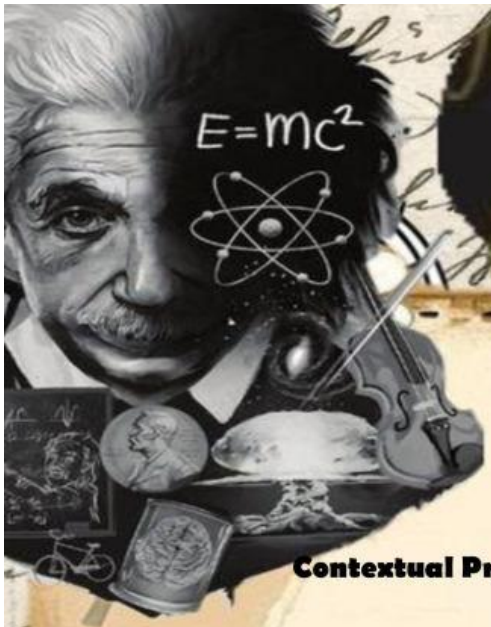
Date: _____

Learning Objectives

Tujuan Pembelajaran

After completing this worksheet, students are expected to:

1. Analyze the relationship between the areas of squares on the sides of a right triangle.
2. Discover the Pythagorean Theorem formula independently.
3. Present exploration results confidently.



PHASE 1: ORIENTATION TO THE PROBLEM

Contextual Problem

A ladder leans against a wall. The foot of the ladder is 3 meters from the wall and the ladder reaches a height of 4 meters.

Question 1

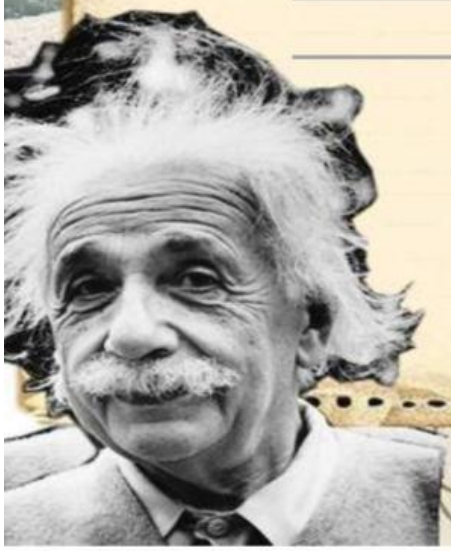
What information is known from the problem?

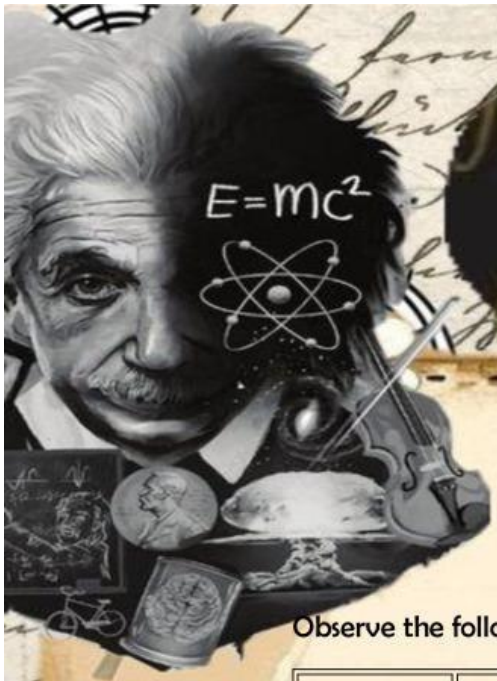
Answer/Jawaban:

Question 2

What length do we need to determine?

Answer





PHASE 2: ORGANIZING STUDENTS FOR LEARNING

Observe the following right triangles.

Triangle	Side a	Side b	Side c
1	3	4	5
2	6	8	10
3	5	12	13

Question 3

Which side is always the longest side?

Answer:

_____

_____

Question 4

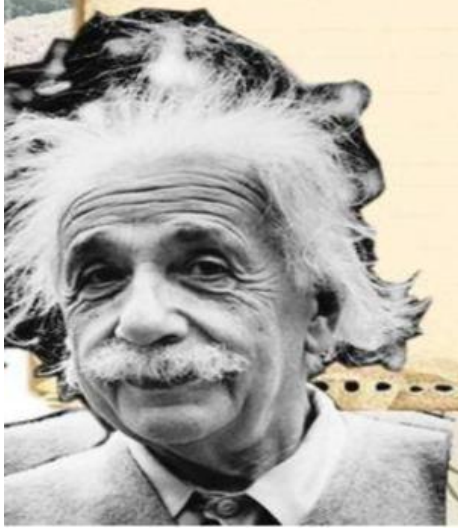
What similarities do you observe among the triangles above?

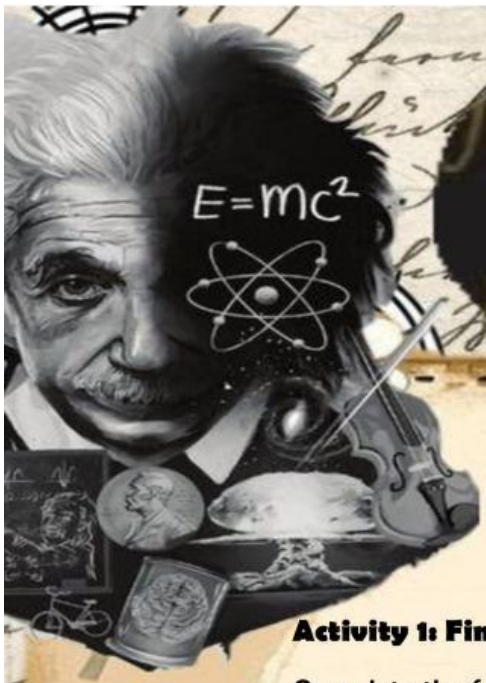
Answer:

_____

_____

_____





PHASE 3: GUIDED INVESTIGATION

Activity 1: Finding Areas of Squares

Complete the following table.

Side Length	Area of Square
3	_____
4	_____
5	_____

Question 5

Write the area of each square.

Answer:

3^2 = _____

4^2 = _____

5^2 = _____

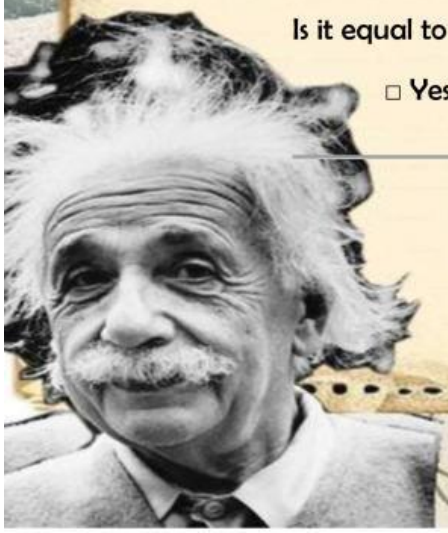
Question 6

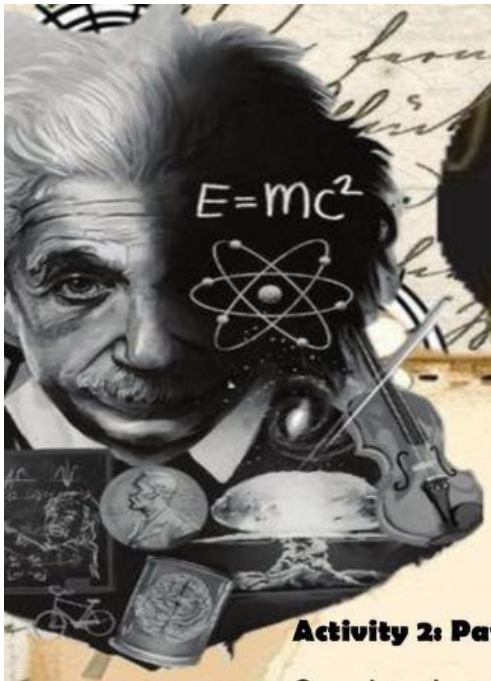
Calculate:

$3^2 + 4^2$ = _____

Is it equal to 5^2?

□ Yes □ No





Activity 2: Pattern Investigation

Complete the table below.

a	b	c	a^2	b^2	c^2
6	8	10	___	___	___
5	12	13	___	___	___

Question 7

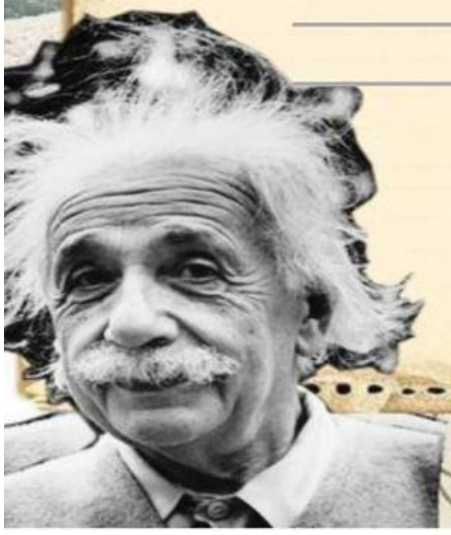
What pattern do you find?

Answer:

Question 8

Write your conjecture about the relationship between a^2, b^2, and c^2.

Answer:



PHASE 4: DEVELOPING AND PRESENTING WORK

Activity 3: Constructing the Formula

Based on your exploration, complete the formula below.

Question 9

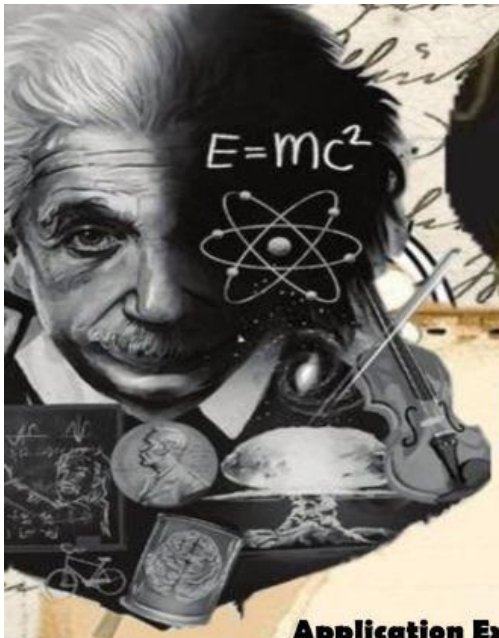
$$a^2 + b^2 = \cdots$$

Answer:

Question 10

Explain in your own words the meaning of the Pythagorean Theorem.

Answer:



PHASE 5: ANALYZING AND EVALUATING THE PROCESS

Application Exercises

Question 11

Find the hypotenuse.

a = 3

b = 4

Answer:

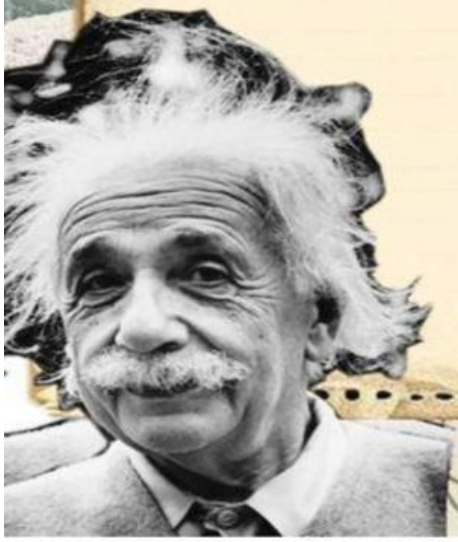
Question 12

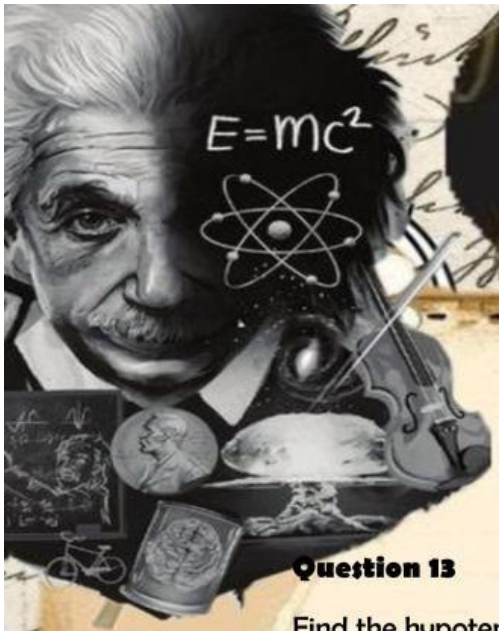
Find the hypotenuse.

a = 5

b = 12

Answer:





Question 13

Find the hypotenuse.

a = 8

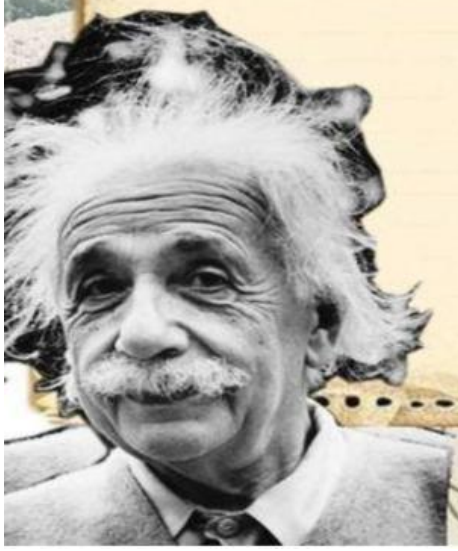
b = 15

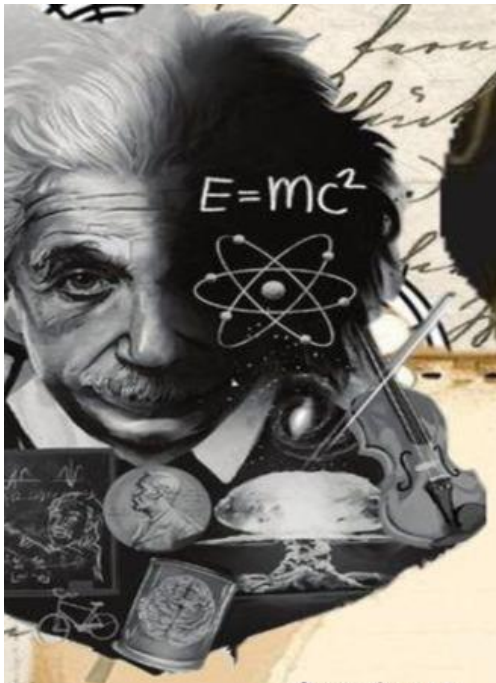
Answer:

Question 14

A rectangular field has a length of 12 m and a width of 5 m. Determine the length of its diagonal.

Answer:





Question 15

A ladder reaches a window 12 meters high. The foot of the ladder is 5 meters from the wall. Determine the length of the ladder.

Answer:

Reflection

1. What new knowledge did you gain today?

2. What difficulties did you encounter during the activity?

3. How did your group solve the problem?