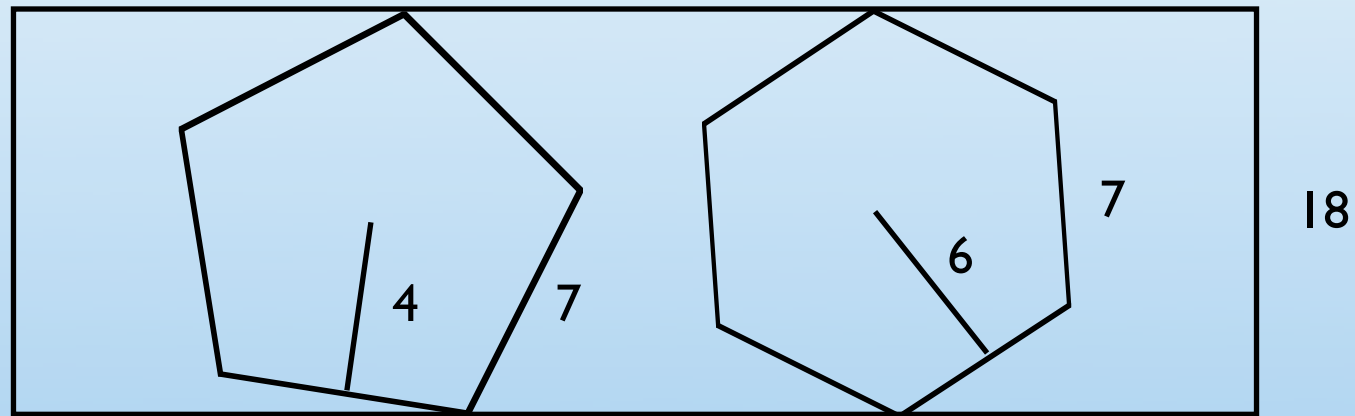


# Day 65

## 1. Opener

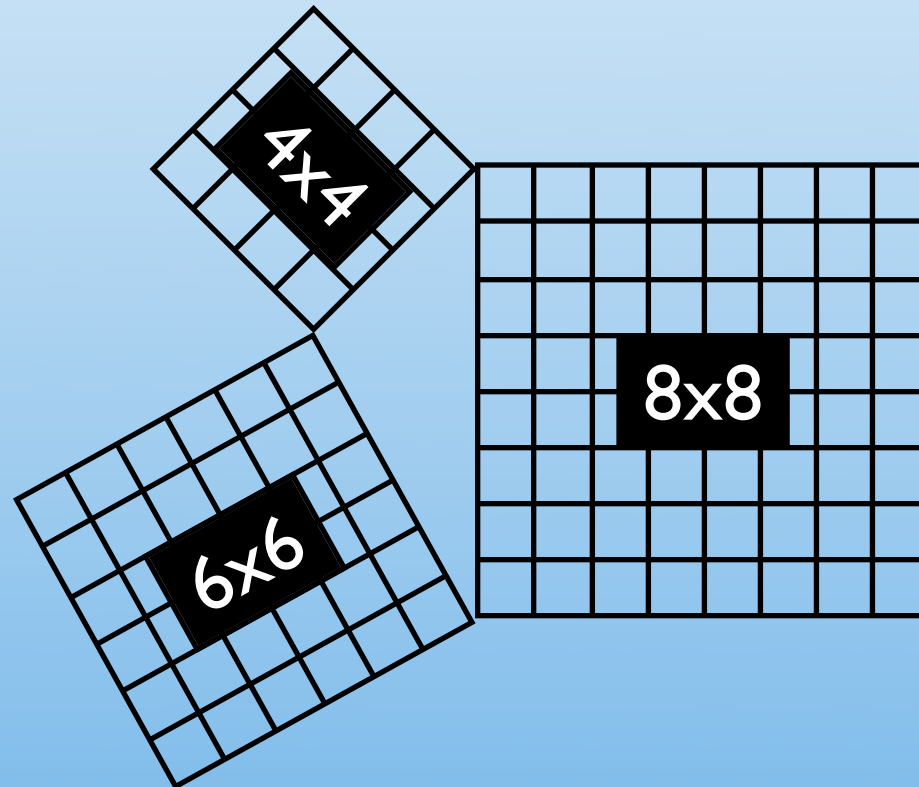
A game board contains a regular pentagon and a regular hexagon.



- What is the probability of hitting the pentagon with a dart at random? The hexagon? The rest of the game board?
- What are the payoff odds of hitting the pentagon? The hexagon? The rest of the game board?
- What do these mean: agoraphobia, phagophobia, philemaphobia, hydrophobophobia, logophobia.

## 2. Pythagorean Investigation

1. Assemble sets of three squares. The corners should touch with no gaps or overlap.
2. What shape is formed inside the squares?
3. Calculate the area of all three squares.



## 2. Pythagorean Investigation

1. Assemble sets of three squares. The corners should touch with no gaps or overlap.
2. What shape is formed inside the squares?
3. Calculate the area of all three squares.

SET	SMALL AREA	SMALL AREA	LARGE AREA	TRIANGLE
1	16	36	64	obtuse

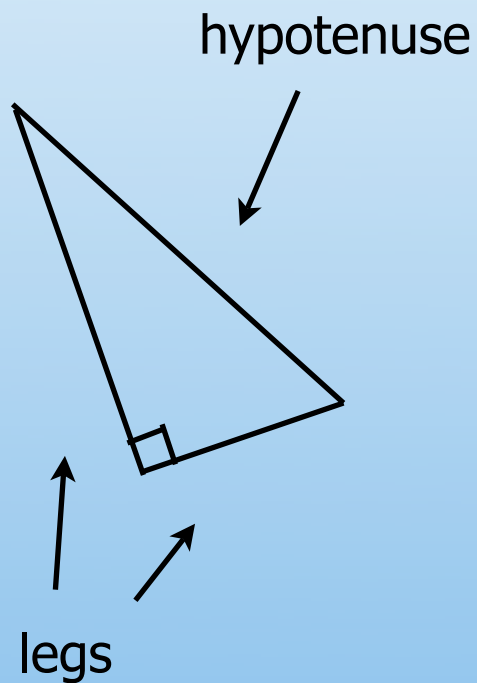
## 2. Pythagorean Investigation

Predict whether the following triangles will be obtuse, acute or right. Then check your answers with the squares.

SET	SMALL SIDE	SMALL SIDE	LARGE SIDE	TRIANGLE
15	5	12	13	right
16	5	13	14	obtuse
17	2	5	6	obtuse
18	3	4	5	right
19	2	7	9	obtuse
20	3	13	15	obtuse
21	9	10	14	obtuse
22	6	7	10	obtuse
23	6	8	10	right
24	6	9	10	acute
25	7	12	13	acute

## 2. Pythagorean Investigation

Let's get conjectural.



Conjecture #1:

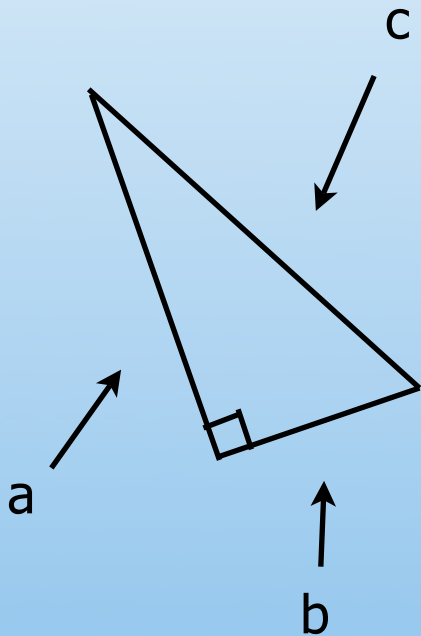
Pythagorean Theorem

The sum of the squares of the legs of a right triangle equals

\_\_\_\_\_.

## 2. Pythagorean Investigation

Let's get conjectural.



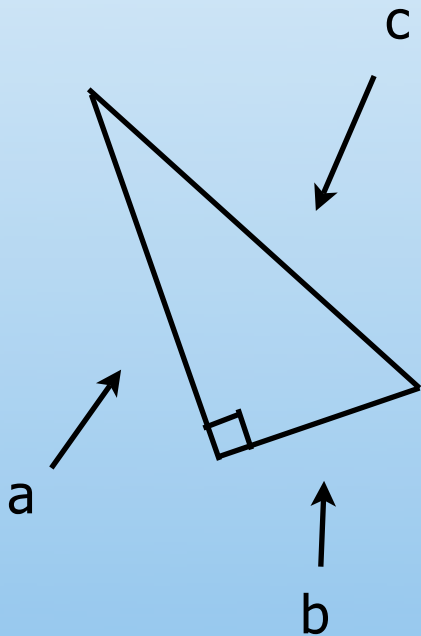
Conjecture #1:

Pythagorean Theorem

The sum of the squares of the legs of a right triangle equals the square of the hypotenuse.

## 2. Pythagorean Investigation

Let's get conjectural.



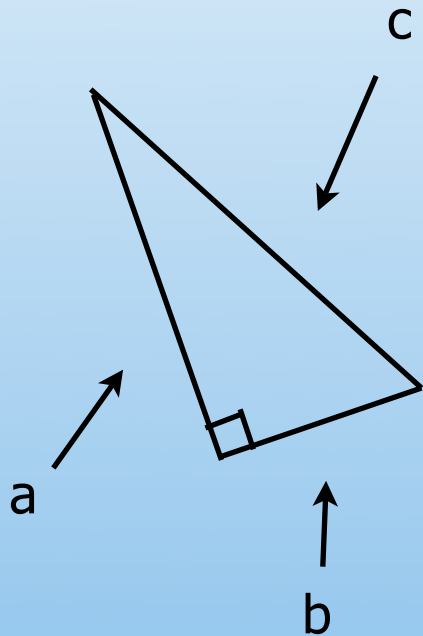
Conjecture #1:

Pythagorean Theorem

The sum of the squares of the legs of a right triangle equals the square of the hypotenuse.

## 2. Pythagorean Investigation

Let's get conjectural.



Conjecture #1:

Pythagorean Theorem

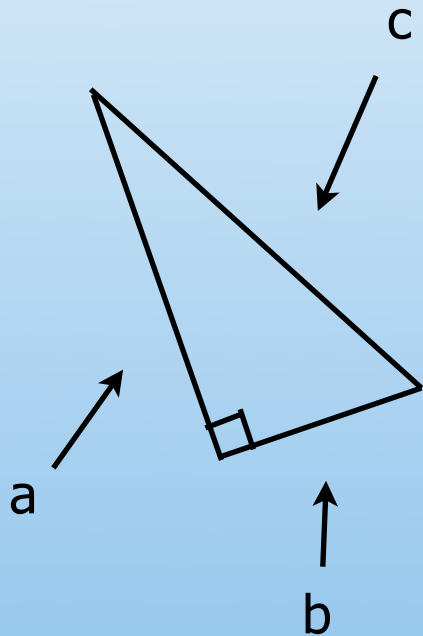
$$a^2 + b^2$$

equals the square of the hypotenuse.



## 2. Pythagorean Investigation

Let's get conjectural.



Conjecture #1:

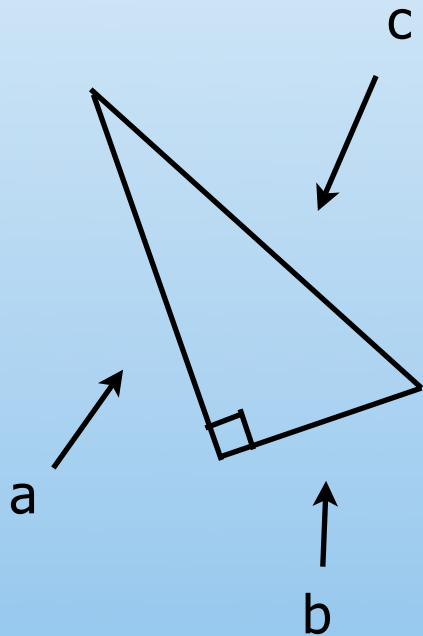
Pythagorean Theorem

$$a^2 + b^2 =$$

the square of the  
hypotenuse.

## 2. Pythagorean Investigation

Let's get conjectural.



Conjecture #1:

Pythagorean Theorem

$$a^2 + b^2 = c^2$$

Conjecture #2:

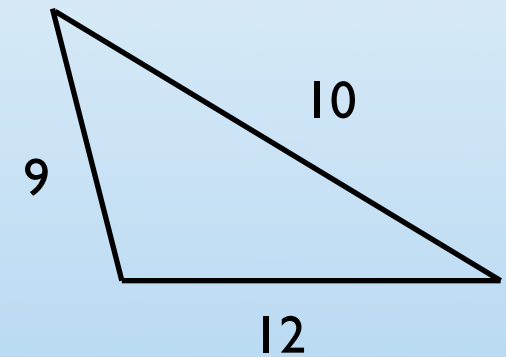
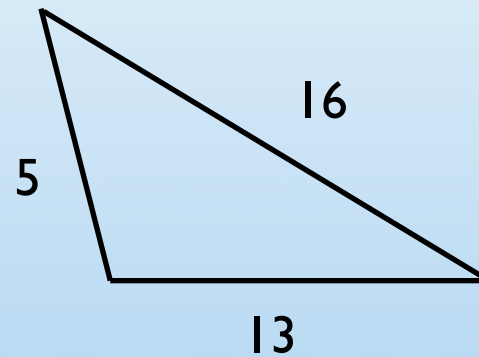
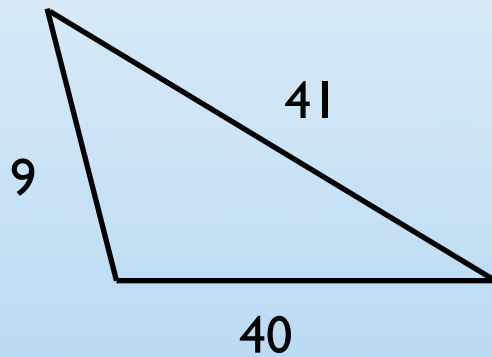
Pythagorean Converse

If  $a^2 + b^2 < c^2$  then the triangle is           .

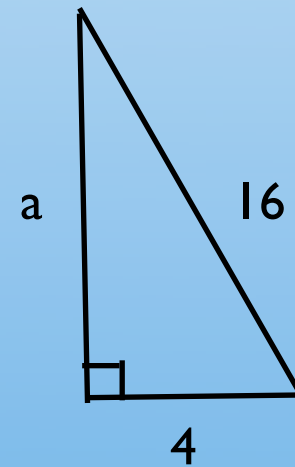
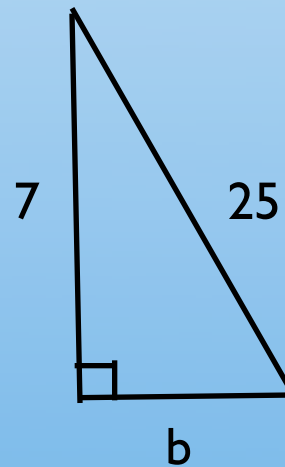
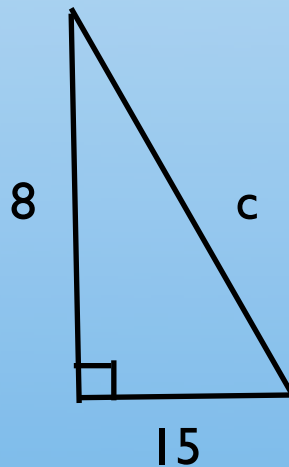
If  $a^2 + b^2 > c^2$  then the triangle is           .

## 2. Pythagorean Investigation

Are these triangles right, acute, or obtuse?



These are right triangles. What is the length of the missing side? (Let's do decimals.)



### **3. Classwork**

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