

Warm-Up

1) Find the rate of change between the two points: (4, 5) and (-2, 3).

2) Compare the rate of change to determine which is greater:

a) (6, 7) and (-3, -4) b) $-3x + 4y = 8$

3) Solve. $\frac{3x + 4}{5} = 24$

4) Solve. $-4(-3x - 6) - 7(3 + 4x) = 2x - (8 + 4x)$

Warm-Up

1) Find the rate of change between the two points: (4, 5) and (-2, 3).

$$m = \frac{y_2 - y_1}{x_2 - x_1} = \frac{3 - 5}{-2 - 4} = \frac{-2}{-6} = \frac{1}{3}$$

2) Compare the rate of change to determine which is greater:

a) (6, 7) and (-3, -4)

$$\frac{-(-3-4)}{9-11} \quad m = \frac{11}{9}$$

b) $-3x + 4y = 8$

$$4y = 3x + 8$$
$$y = \frac{3}{4}x + 2$$

$$m = \frac{3}{4} \quad a > b$$

3) Solve. $3x + 4 = 24$

$$5 \quad 3x + 4 = 120$$
$$3x = 116$$
$$x = \frac{116}{3}$$

4) Solve. $-4(-3x - 6) - 7(3 + 4x) = 2x - (8 + 4x)$

$$12x + 24 - 21 - 28x = 2x - 8 - 4x$$

$$-16x + 3 = -2x - 8$$

$$3 = 14x - 8$$

$$11 = 14x$$

$$\frac{11}{14} = x$$

Go Over HW

$$10) 8.1 \times 10^6 + 3.8 \times 10^6$$

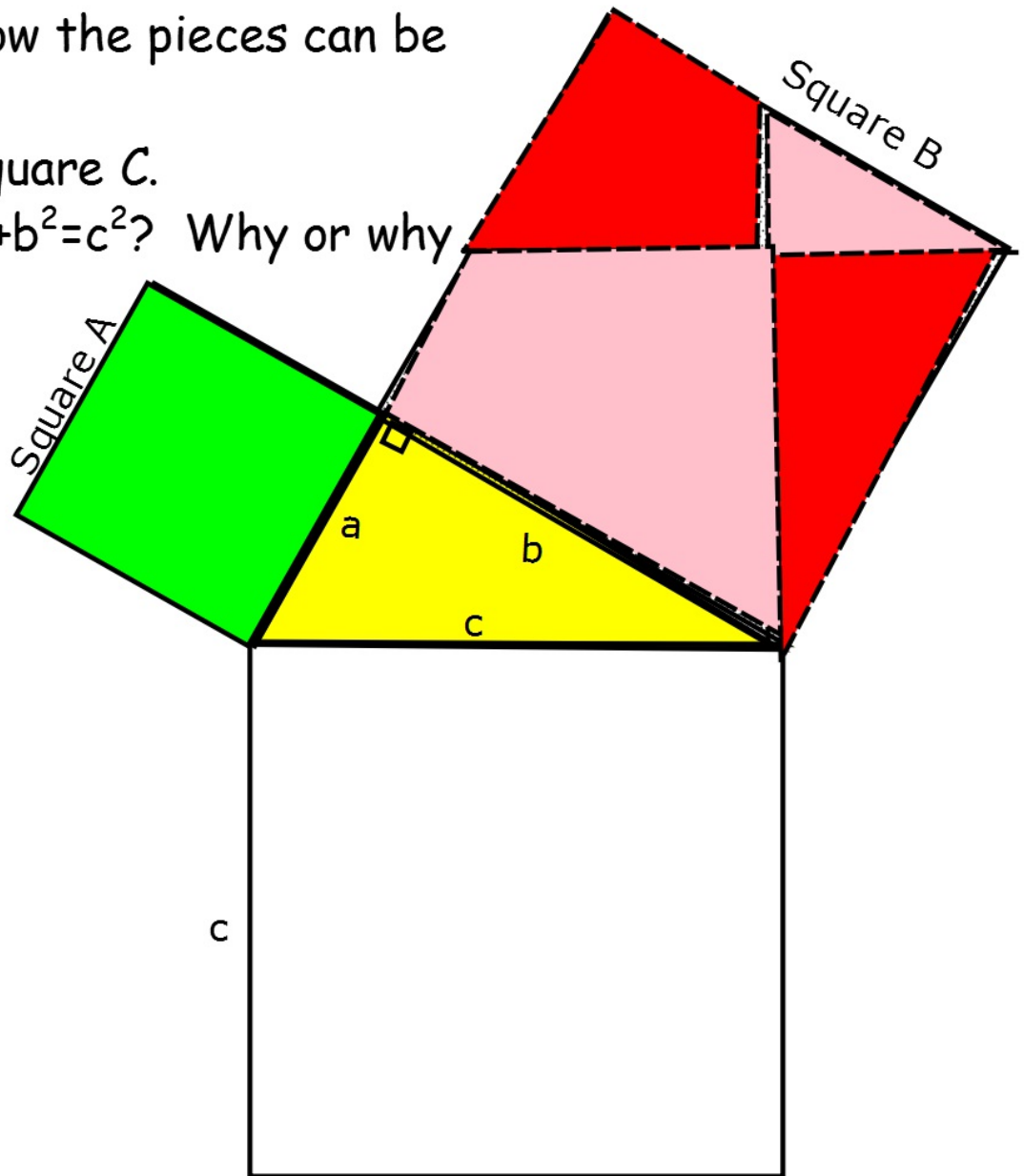
$$\left(\begin{array}{r} 8.1 \\ + 3.8 \\ \hline 11.9 \end{array} \right) \times 10^6$$

$$11.9 \times 10^6$$

$$1.19 \times 10^7$$

Day 2 -Pythagoren Theorem Proofs and Foldable

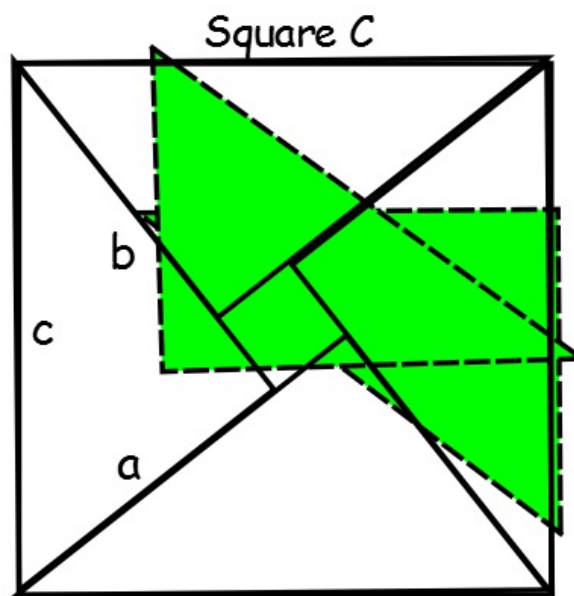
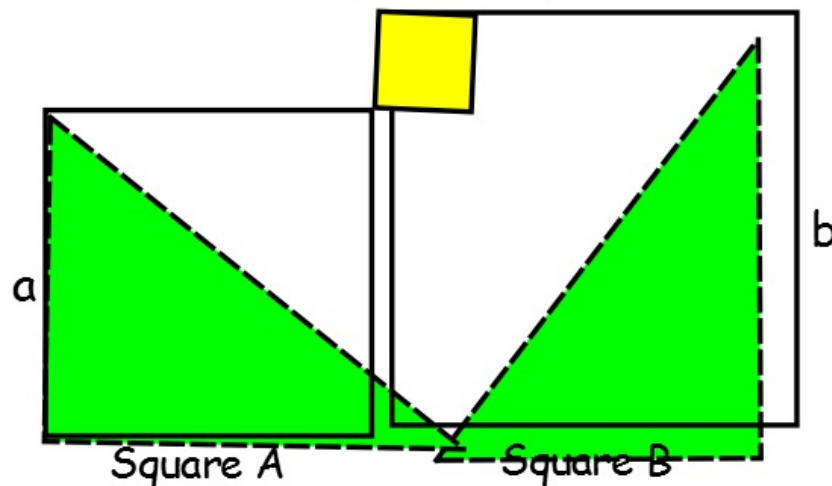
1. Move/rotate Square A and four pieces from Square B.
2. Show how the pieces can be arranged to cover Square C.
3. Does $a^2 + b^2 = c^2$? Why or why not?



Pythagorean Puzzle #1 Square C

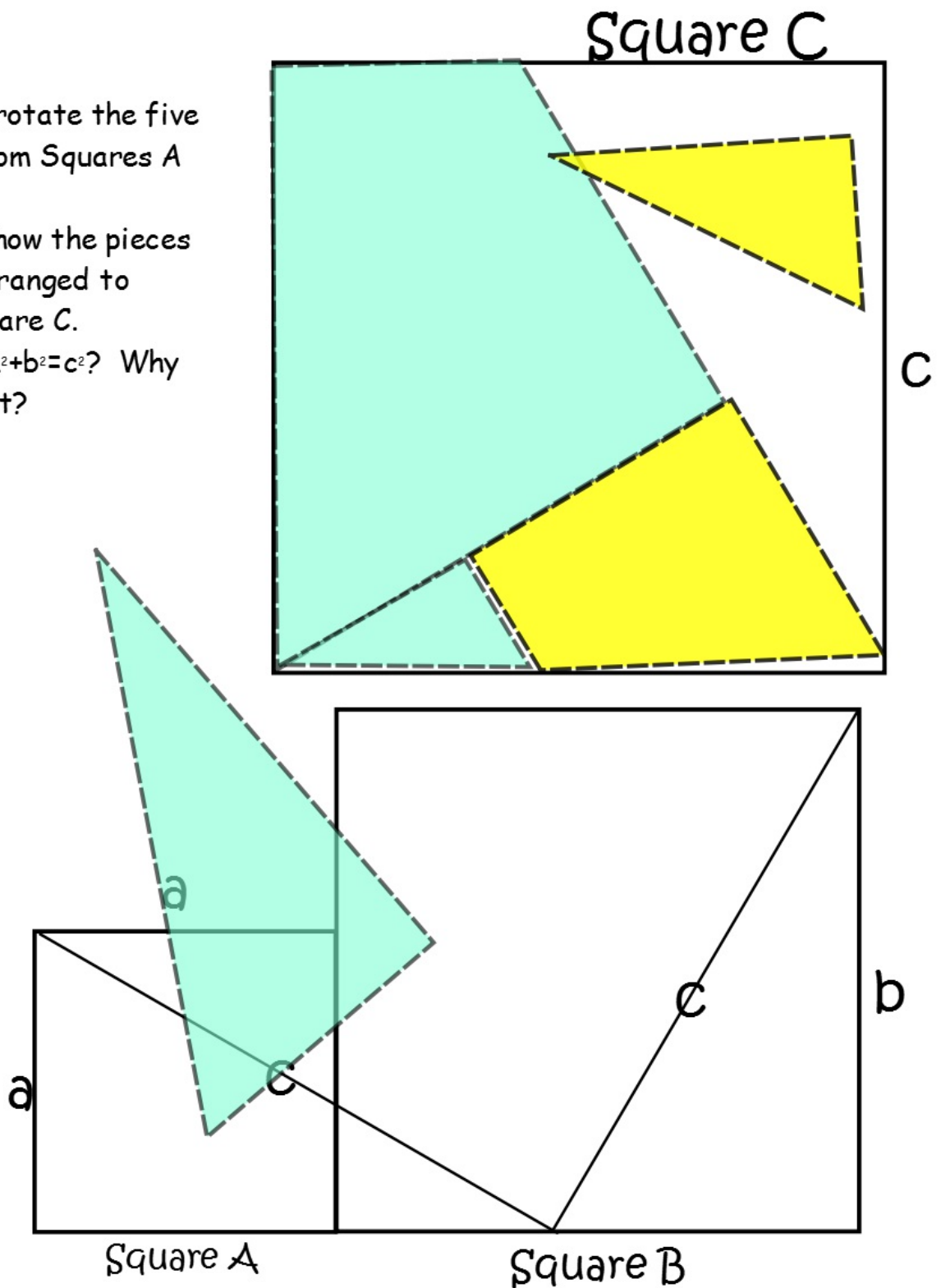
Pythagorean Puzzle #2

1. Move/rotate the pieces from Square C.
2. Show how the pieces can be arranged to cover Squares A and B.
3. Does $a^2 + b^2 = c^2$? Why or why not?



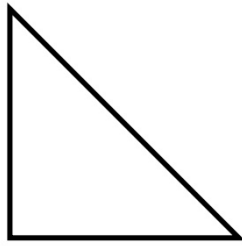
Pythagorean Challenge Puzzle

1. Move/rotate the five pieces from Squares A and B.
2. Show how the pieces can be arranged to cover square C.
3. Does $a^2 + b^2 = c^2$? Why or why not?



Pythagorean Theorem

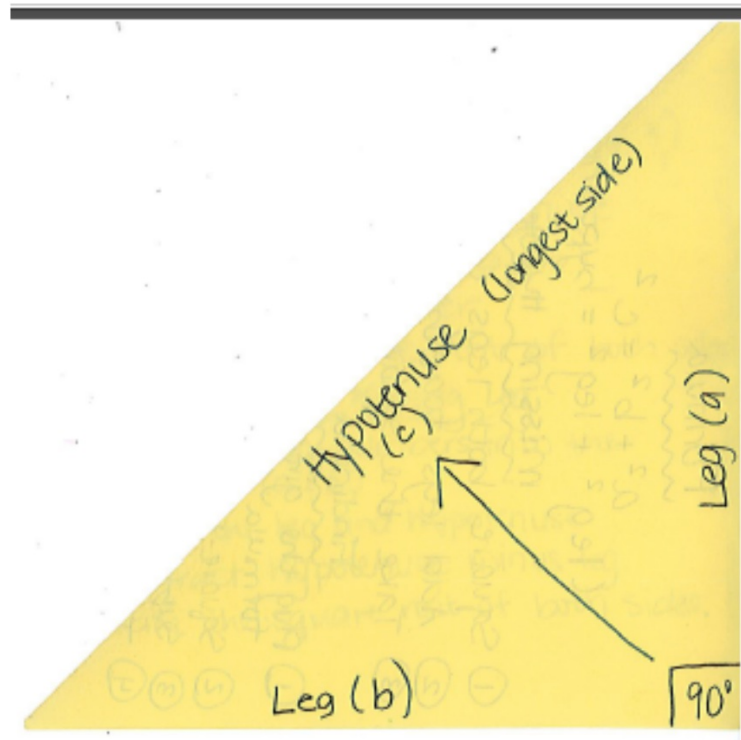
A right triangle has a 90 degree angle.



The side opposite of the 90 degree angle is the ***hypotenuse***. This is the **LONGEST** side of the triangle.

Legs are the names for the two remaining sides of the triangle.

Fold the square and write the following:



*****Notice the Hypotenuse is across from the right angle.
The Legs are the sides that make the right angle.

Write the following information on your square

Formula
 $a^2 + b^2 = c^2$
(leg² + leg² = hypotenuse²)
missing hypotenuse

- ① Square both legs (a + b)
- ② Add legs together
- ③ Take the square root of both sides

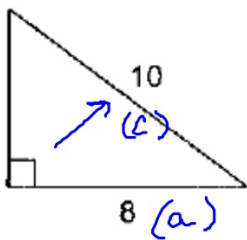
Finding a missing leg

- ① Plug the given numbers into the formula (a & c)
- ② Square the leg and hypotenuse
- ③ Subtract hypotenuse minus leg.
- ④ Take the square root of both sides.

Let's put this foldable to use:

Find each missing length to the nearest tenth.

1)



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

$$8^2 + b^2 = 10^2$$

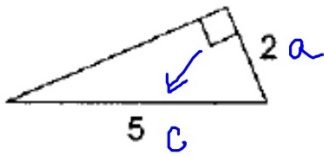
$$64 + b^2 = 100$$

$$b^2 = 36$$

$$\sqrt{b^2} = \sqrt{36}$$

$$b = 6$$

3)



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

$$2^2 + b^2 = 5^2$$

$$4 + b^2 = 25$$

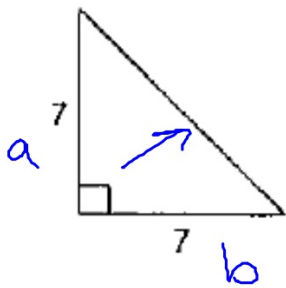
$$b^2 = 21$$

$$\sqrt{b^2} = \sqrt{21}$$

$$b = 4.58$$

$$b = 4.6$$

5)



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

$$7^2 + 7^2 = c^2$$

$$49 + 49 = c^2$$

$$98 = c^2$$

$$\sqrt{98} = \sqrt{c^2}$$

$$9.89 = c$$

$$9.9 = c$$