

OBJECTIVE 1: Terminology

This chapter has a lot of review terms, but some new ones have been added!

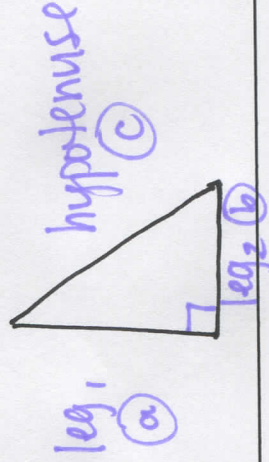
TASK 1: Come up with your own definition in (a) and your own diagram in (b).

- a) *Pythagorean Triple (s):* 3, 4, 5; 5, 12, 13; 7, 24, 25; 8, 15, 17; 20, 21, 29. These are 5 sets of triples, what are triples? Does 6, 8, 10 also qualify as a triple, based on your definition?

*① always works in $a^2 + b^2 = c^2$; no decimals
→ multiples work too!*

② Yes! 3, 4, 5 (x2) = 6, 8, 10 ✓

b) Label a right triangle with legs, hypotenuse, and the letters from the Pythagorean Theorem (a, b, & c)



OBJECTIVE 2: Pythagorean Theorem & Pythagorean Inequality Theorem

- $a^2 + b^2 = c^2$ or $leg_1^2 + leg_2^2 = hypotenuse^2$
- **RECALL:**
 - $a^2 + b^2 = c^2$ → right triangle
 - $a^2 + b^2 < c^2$ → obtuse triangle
 - $a^2 + b^2 > c^2$ → acute triangle

TASK 2: Using the Pythagorean Theorem & Pythagorean Inequality Theorem classify the triangle with the given side lengths.

a) $8, 2\sqrt{65}, 14$

↳ 16.125

$$8^2 + 14^2 \stackrel{?}{=} (2\sqrt{65})^2$$

$$260 \stackrel{?}{=} 260$$

Right

b) 11 ft, 12 ft, 20 ft

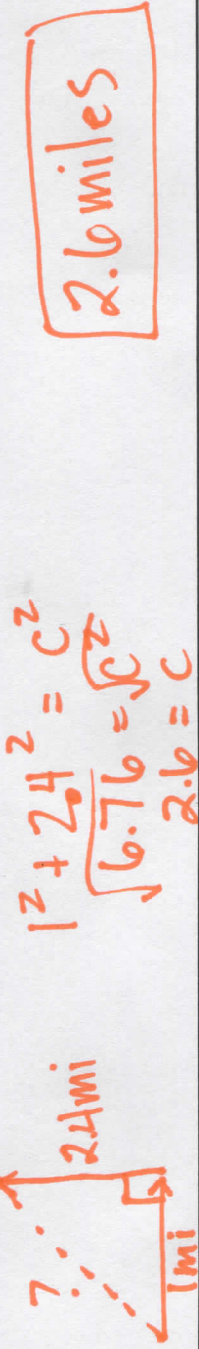
$$11^2 + 12^2 \stackrel{?}{=} 20^2$$

$$265 \stackrel{?}{=} 400$$

Obtuse

TASK 3: More Pythagorean Theorem

A boat travels 1 mile east and then turns and travels 2.4 miles north. How far is the boat from its starting point?



b) Which is NOT a Pythagorean Triple? (circle all that apply, show your work to justify your answer!)

A) 3, 4, 5

$$3^2 + 4^2 = 5^2 \quad \checkmark$$

B) 5, 12, 13

$$5^2 + 12^2 = 13^2 \quad \checkmark$$

C) 8, 15, 17

$$8^2 + 15^2 = 17^2 \quad \checkmark$$

D) 7, 23, 24

$$7^2 + 23^2 \neq 24^2 \Rightarrow (7, 24, 25)$$

E) 19, 20, 21

$$19^2 + 20^2 \neq 21^2 \Rightarrow (20, 21, 29)$$

Still need help with: