

NOTES: LESSON 7.3 – PYTHAGOREAN THEOREM w/ Word Problems and Coordinate Planes

Learning Goal: I can use Pythagorean Theorem to calculate the length of any missing side of a right triangle in a word problem or on a coordinate plane.

Meta de Aprendizaje: Puedo usar el teorema de Pitágoras para calcular la longitud de cualquier lado faltante de un triángulo rectángulo en un problema de palabra o en un plano de coordenadas.

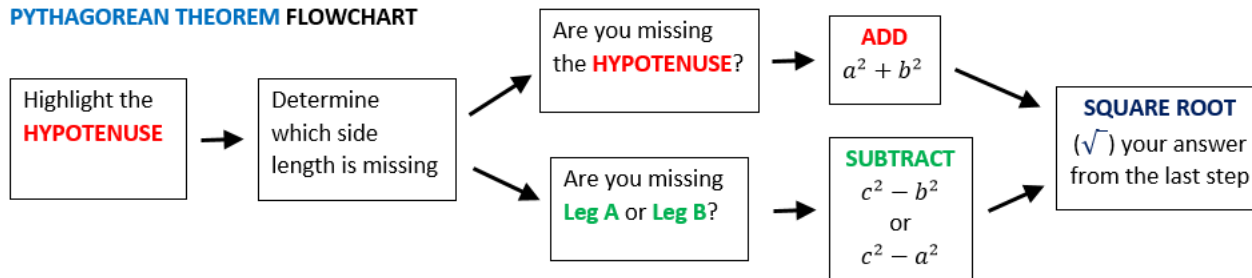
Language Goal: I can discuss with a partner the difference between a slope problem and a Pythagorean Theorem problem on a coordinate plane, then write our explanation.

Lenguaje Objetivo: Puedo discutir con un compañero la diferencia entre un problema de pendiente y un problema de Teorema de Pitágoras en un plano de coordenadas, luego escribir nuestra explicación.

PYTHAGOREAN THEOREM:

$$\underline{\quad}^2 + \underline{\quad}^2 = \underline{\quad}^2$$

PYTHAGOREAN THEOREM FLOWCHART



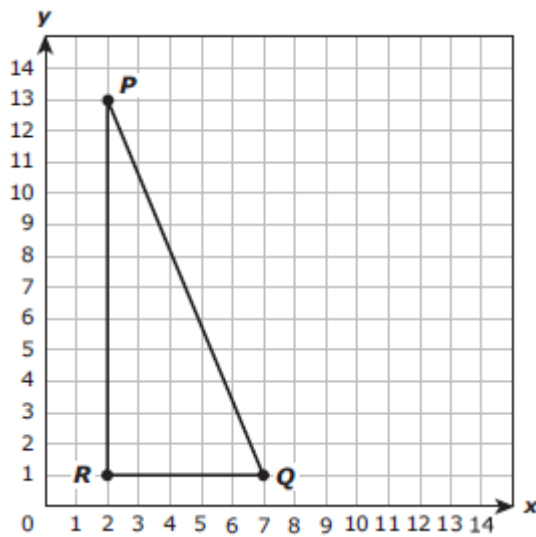
PYTHAGOREAN THEOREM vs. SLOPE w/ a Coordinate Plane

PYTHAGOREAN THEOREM

Key Words: distance, length, height, how long, how high/tall

EXAMPLE 1:

What is the *length* of PQ?

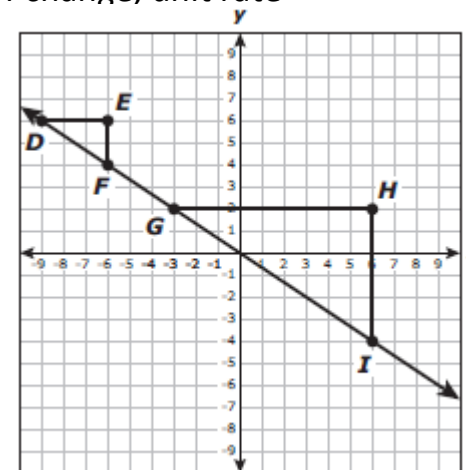


SLOPE

Key Words: slope, rate, rate of change, unit rate

EXAMPLE 1:

What is the *slope* of the line?

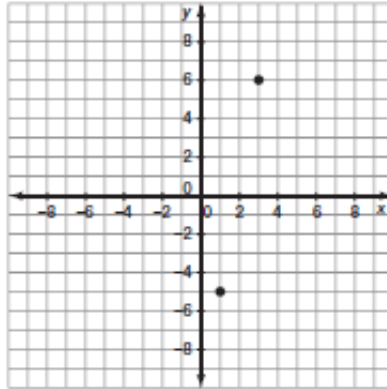


PYTHAGOREAN THEOREM

Key Words: distance, length, height, how long, how high/tall

EXAMPLE 2:

What is the *distance* between the two points?

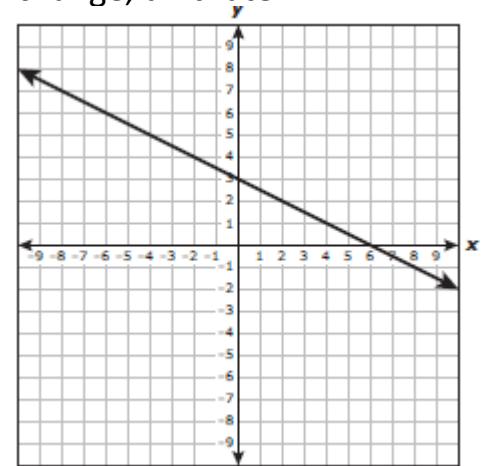


SLOPE

Key Words: slope, rate, rate of change, unit rate

EXAMPLE 2:

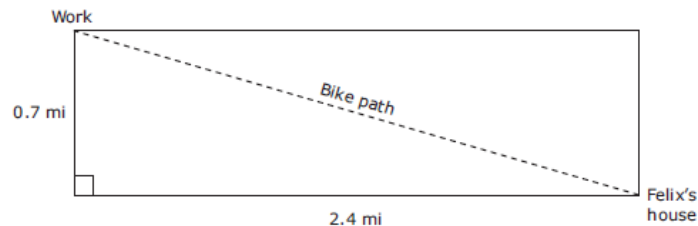
What is the *rate of change* of the line?



PYTHAGOREAN THEOREM w/ Word Problems

EXAMPLE 1

To get from home to work, Felix can either take a bike path through the rectangular park or ride his bike along two sides of the park



How much *farther* would Felix travel by riding along two sides of the park than he would be taking the path through the park?

- F 1.7 mi
- G 0.6 mi
- H 2.5 mi
- J 0.1 mi

EXAMPLE 2

The bottom of a 12-foot ladder is 5 feet away from a building. The top of the ladder is touching the building. How many feet up the building does the ladder reach? (*Very common problem!*)