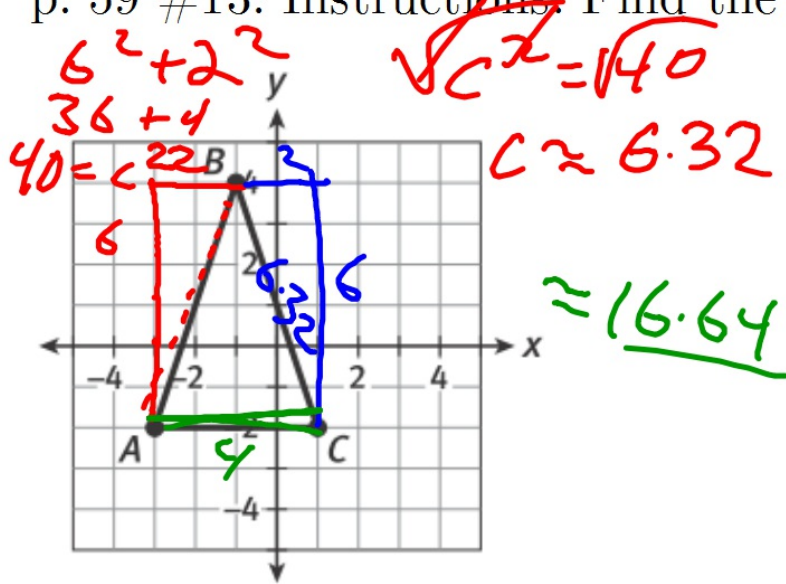


Good Afternoon: warm up in textbooks

p. 59 #13: Instructions: Find the perimeter of triangle ABC.

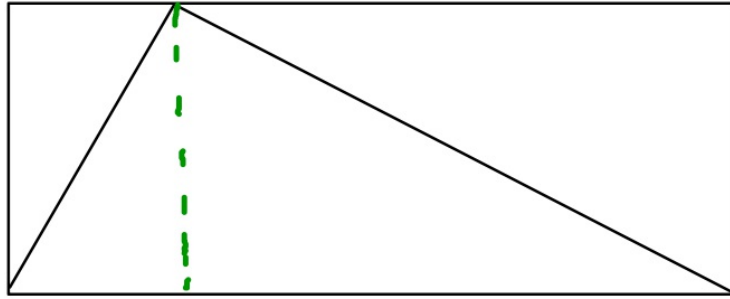


Reminders:

Can reassess in Fri DS

Mathematics is the art of explanation. - Paul Lockhart

A mathematician, like a painter or poet, is a maker of patterns. If his patterns are more permanent than theirs, it is because they are made with ideas. - GH Hardy



If/Then Statements, Logic, and Proof

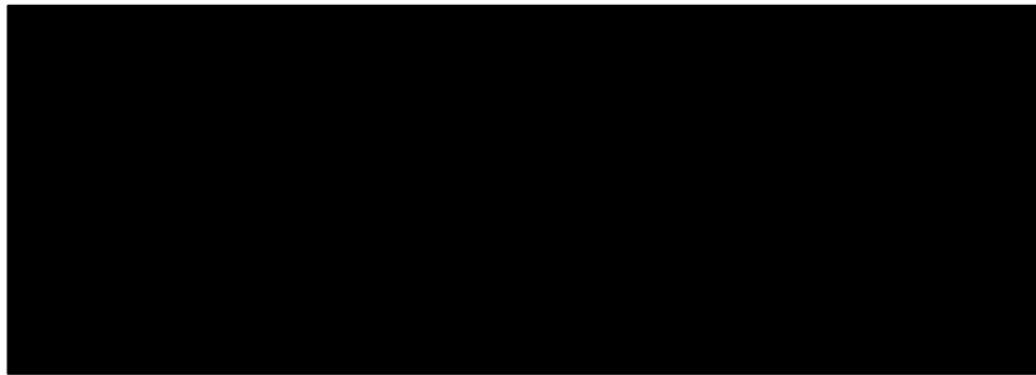
$$a^3 + b^3 \neq c^3$$

The hardest math problem in history

Fermat's Last Theorem

there are no whole number solutions to

$$a^n + b^n = c^n \quad \text{if } n \text{ is } 3 \text{ or greater}$$



Logical Statements

$$P \rightarrow Q$$

"If it is raining, then I carry an umbrella."
hypothesis conclusion
 P Q

Converse: " $Q \rightarrow P$ " "If I carry umb, then it's raining"

Inverse: If not rain, then no umbrella.

$$\overset{(\text{not})}{\sim} P \rightarrow \sim Q$$

Contrapositive: If no umbrella, then not raining.

$$\sim Q \rightarrow \sim P$$

Some terminology:

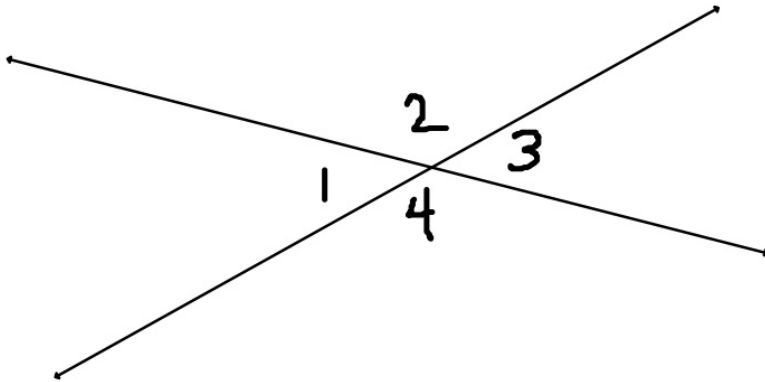
Conjecture: an educated guess, needs to be proven (arrived at by inductive reasoning).

Axiom (postulate): a basic assumption



Theorem: a proven mathematical statement (arrived at by deductive reasoning)

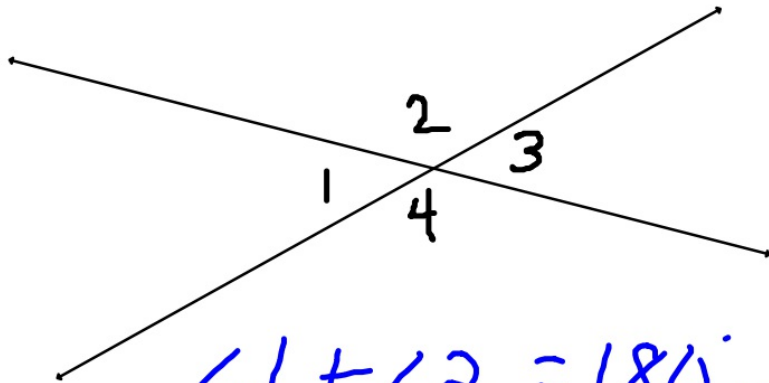
Make a conjecture from this image



Conjecture: $\angle 1 \cong \angle 3$



My First Geometry Proof



Given: Two intersecting lines, angles
1, 2, 3, and 4

Prove: $\angle 1 \cong \angle 3$

$\angle 1 + \angle 2 = 180^\circ$, because they make a line.
 $\angle 2 + \angle 3 = 180^\circ$, " "

By substitution

$$\cancel{\angle 1 + \angle 2} = \cancel{\angle 2 + \angle 3} \Rightarrow \underline{\angle 1 = \angle 3}.$$

Q.E.D.

Theorem: If two angles are vertical angles, then they are congruent.

Assessment

- Put your name on it
- Use a cover sheet
- Show all work for full credit
- Finished? Put it in basket. If you have headphones, you can watch the HW video if you wish.

Homework:

watch and take notes on the video posted at mgeo.weebly.com