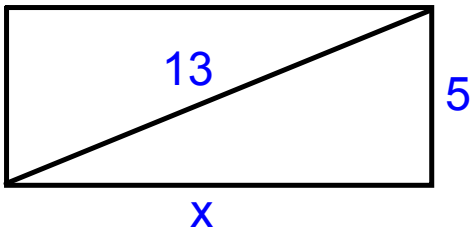
Advanced Geometry Starter

Find the perimeter of the rectangle.



$x^2 + 5^2 = 13^2$

$x^2 + 25 = 169$

$x^2 = 144$

$x = 12$

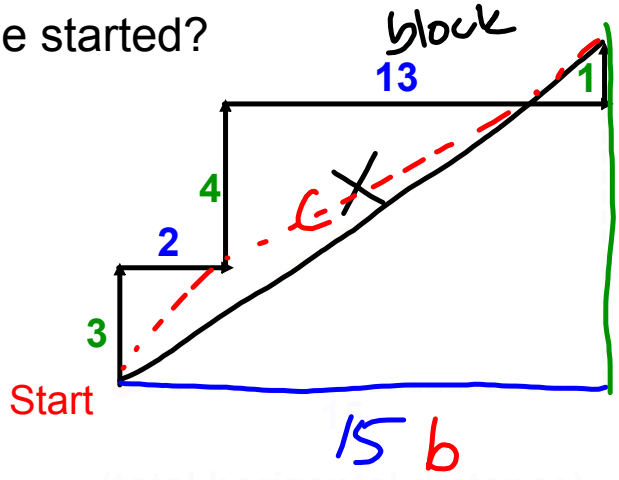
Then $p = 2(5) + 2(12)$

$p = 34$

Jan 9-5:33 PM

Example

Mike biked 3 blocks north, 2 blocks east, 4 blocks north, 13 blocks east, and 1 ~~meter~~ block north. How far is he from where he started?



$8^2 + 15^2 = c^2$

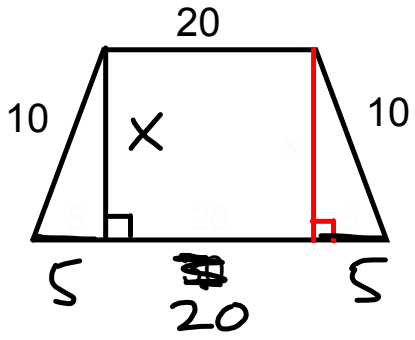
$64 + 225 = c^2$

$\sqrt{289} = \sqrt{c^2}$

$+17 = c$

Example

Find the altitude of an isosceles trapezoid whose sides have lengths of 10, 30, 10, and 20



$x^2 + 5^2 = 10^2$

$x^2 = 75$

$\sqrt{x^2} = \sqrt{75}$

$x = 5\sqrt{3}$

$x^2+5^2=10^2$

$x^2+25=100$

$\sqrt{x^2}=\sqrt{75}$

$25 < 5\ 5$

$x=\sqrt{75}$.

$x=+5\sqrt{3}$

How can we check if a triangle is a right triangle?

Use the CONVERSE

of the Pythagorean Theorem

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

If a triangle is not a right triangle, then it must be either actute or obtuse. How can we tell which type it is?

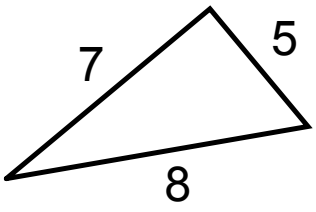
$c^2 > a^2 + b^2 \Rightarrow$ Obtuse Triangle

$c^2 < a^2 + b^2 \Rightarrow$ Acute Triangle

Index Card

Classify the triangles as right, obtuse, or acute.

Note: Triangles are NOT drawn to scale

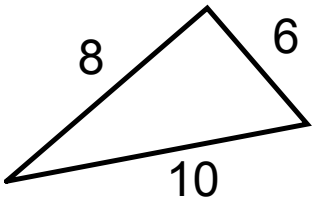


8^2 ? $7^2 + 5^2$

64 ? 49 + 25

64 < 74

acute

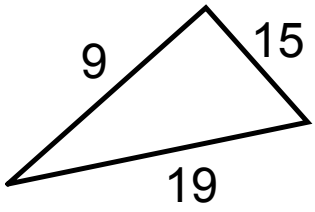


10^2 ? $6^2 + 8^2$

100 ? 36 + 64

100 = 100

right



19^2 ? $9^2 + 15^2$

361 ? 81 + 225

361 > 306

obtuse

Jan 9-6:46 PM

Classwork

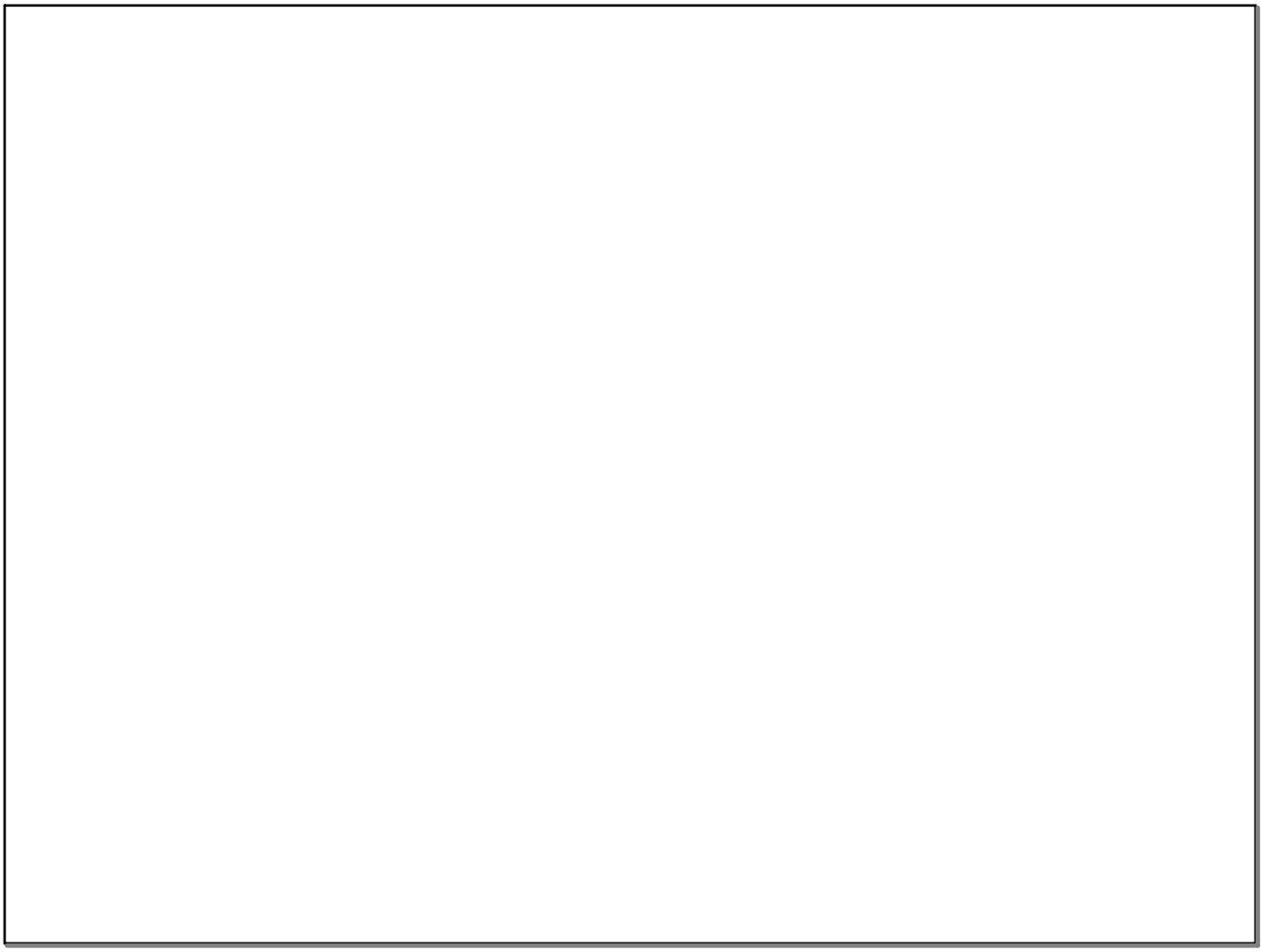
p. 387 #1(a,c,e,g), 2 - 8, 13, 17, 22

Homework

~~Watch "Pythagorean Triplets"~~

~~Index card: Common families p. 398~~

Jan 9-7:06 PM



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