9-4-13

1st Geo

Last nights

(14) If D is between A and B with AD = 4n, BD = 5n+2, and AB = 11n-8, what is AD?

$AD + DB = AB$

$4n + 5n + 2 = 11n - 8$

$9n + 2 = 11n - 8$

$-9n \quad -9n$

$2 = 2n - 8$

$+8 \quad +8$

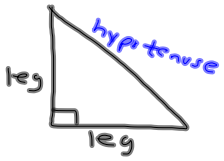
$\frac{10}{2} = \frac{2n}{2}$

$5 = n$

$\therefore AD = 4(5) = 20$

Pythagorean Theorem

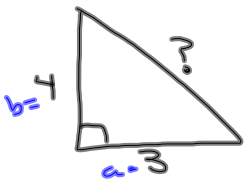
Right triangle



$leg^2 + leg^2 = hypotenuse^2$

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

Simple examples



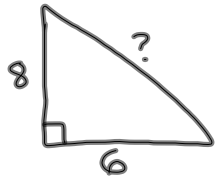
$a^2 + b^2 = c^2$

$3^2 + 4^2 = c^2$

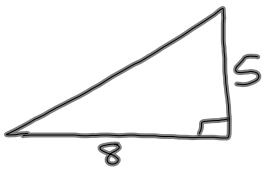
$9 + 16 = c^2$

$\sqrt{25} = \sqrt{c^2}$

$5 = c$



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



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

$5^2+8^2=c^2$

$25+64=c^2$

$\sqrt{89}=\sqrt{c^2}$

$c \approx 9.4$

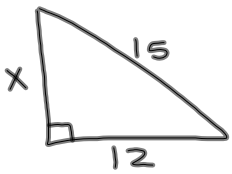
$a^2+b^2=c^2$

$13^2+2^2=c^2$

$169+4=c^2$

$\sqrt{173}=\sqrt{c^2}$

$13.22 \approx c$



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

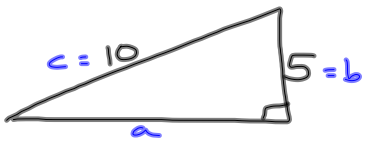
$x^2+12^2=15^2$

$x^2+144=225$

$-144 \quad -144$

$\sqrt{x^2}=\sqrt{81}$

$x=9$



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

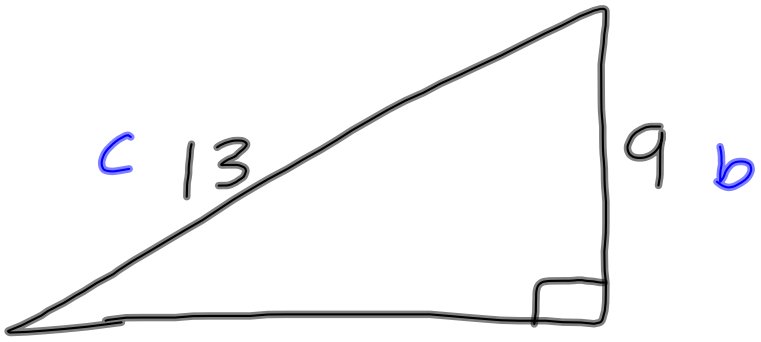
$a^2+5^2=10^2$

$a^2+25=100$

$-25 \quad -25$

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

$a \approx 8.7$



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

$$a^2 + 9^2 = 13^2$$

$$a^2 + 81 = 169$$

$$-81 \quad -81$$

$$\sqrt{a^2} = \sqrt{88}$$

$$a \approx 9.4$$