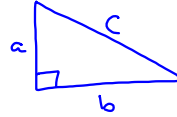


9.2 The Pythagorean Theorem

What is Pythagorean Theorem

If it is a right triangle then the sum of the squares of the legs is equal to the square of the hypotenuse

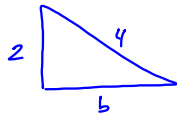
If $\triangle ABC$ is a rt \triangle then $a^2 + b^2 = c^2$



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

to find a
 $a^2 = c^2 - b^2$

to find b
 $b^2 = c^2 - a^2$



$$b^2 = 4^2 - 2^2$$

$$b^2 = 16 - 4$$

$$\sqrt{b^2} = \sqrt{12}$$

$$b = 2\sqrt{3}$$

Pythagorean Triples

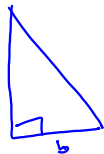
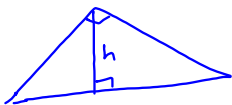
Occur when a, b, c are whole numbers

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

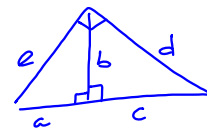
$$5, 12, 13 \quad 5^2 + 12^2 = 13^2$$

Ways to find Area

$$A = \frac{1}{2}bh$$



Use 9.1 \triangle 's with pythagorean



$$\frac{b}{a} = \frac{b}{c}$$

$$\frac{e}{d} = \frac{d}{a+c}$$

$$\frac{e}{e} = \frac{e}{a+c}$$

7 538 - 539

2-36 even