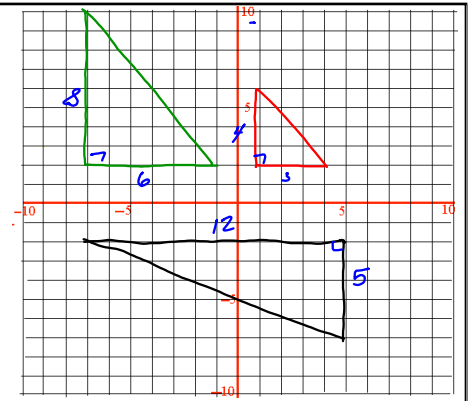
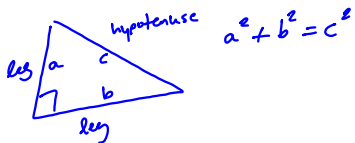


9.1 Pythagorean Triangles and Reasoning



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



$$8^2 + 6^2 = c^2$$

$$64 + 36 = c^2$$

$$\sqrt{100} = \sqrt{c^2}$$

$$10 = c$$

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

$$9 + 16 = c^2$$

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

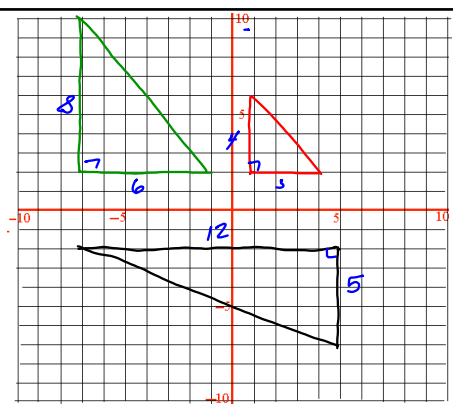
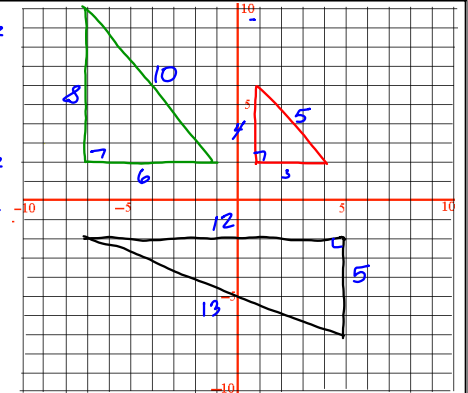
$$5 = c$$

$$5^2 + 12^2 = c^2$$

$$25 + 144 = c^2$$

$$\sqrt{169} = \sqrt{c^2}$$

$$13 = c$$



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

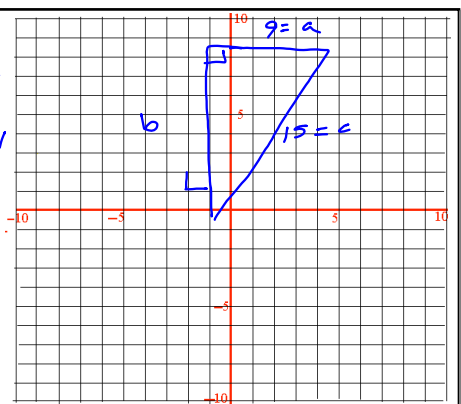
$$b^2 = c^2 - a^2$$

$$b^2 = 15^2 - 9^2$$

$$b^2 = 225 - 81$$

$$\sqrt{b^2} = \sqrt{144}$$

$$b = 12$$



find x first

$$3^2 + 4^2 = x^2$$

$$9 + 16 = x^2$$

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

$$5 = x$$

$$5^2 + 12^2 = y^2$$

$$25 + 144 = y^2$$

$$\sqrt{169} = \sqrt{y^2}$$

$$13 = y$$

Reasoning
(coming to a conclusion)

Inductive	Deductive
	Rules, Laws, Definitions
see pattern	can be proven true
make conjecture	uses general statements
based on observation	

Every morning Chad stops at the red light on Columbia Inductive

The speed limit on state highways is 60mph
John is on a state highway Deductive

The challenge rope is climbed by all boys
John climbed the rope Inductive