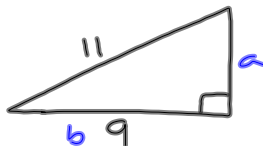


9-5-13  
5<sup>th</sup> Geo

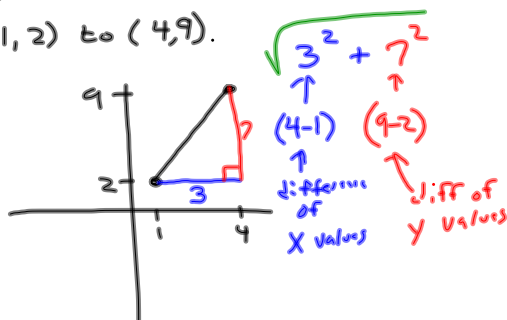
### Pythagorean Theorem Continued

①



$$\begin{aligned} a^2 + b^2 &= c^2 \\ a^2 + 9^2 &= 11^2 \\ a^2 + 81 &= 121 \\ \underline{-81 \quad -81} & \\ \sqrt{a^2} &= \sqrt{40} \\ a &\approx 6.3 \end{aligned}$$

② Find the distance from (1, 2) to (4, 9).

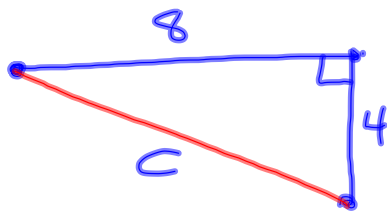


$$\text{Distance} = \sqrt{\Delta x^2 + \Delta y^2}$$

Find the distance from (3, 7) to (4, 10).

$$\begin{aligned} D &= \sqrt{\Delta x^2 + \Delta y^2} \\ &= \sqrt{1^2 + 3^2} \\ &= \sqrt{1 + 9} \\ &= \sqrt{10} \\ &\approx 3.162277... \\ &\approx 3.2 \end{aligned}$$

If you walk 8 miles due East and then 4 miles due South, how far are you from your starting point?



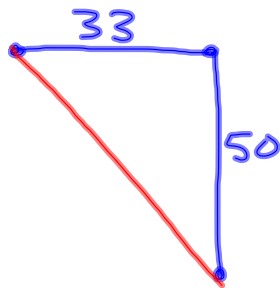
$$8^2 + 4^2 = c^2$$

$$64 + 16 = c^2$$

$$\sqrt{80} = c$$

$$8.9 \approx c$$

If you run due North 50 feet and then turn and run 33 feet due West, how far are you from the start?



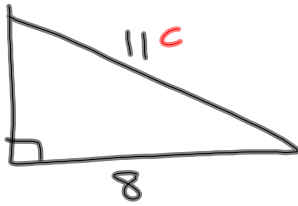
$$33^2 + 50^2 = c^2$$

$$1089 + 2500 = c^2$$

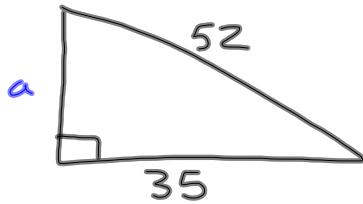
$$\sqrt{3589} = c$$

$$59.9 \approx c$$

9-5-13  
6<sup>th</sup> Geo

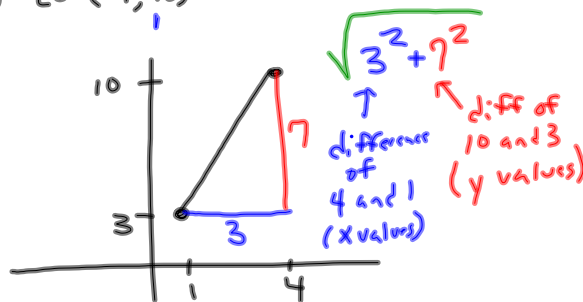


$$\begin{aligned} a^2 + b^2 &= c^2 \\ a^2 + 8^2 &= 11^2 \\ a^2 + 64 &= 121 \\ -64 \quad -64 & \\ \hline \sqrt{a^2} &= \sqrt{57} \\ a &= 7.5 \end{aligned}$$



$$\begin{aligned} a^2 + b^2 &= c^2 \\ a^2 + 35^2 &= 52^2 \\ a^2 + 1225 &= 2704 \\ -1225 \quad | \quad 225 & \\ \hline \sqrt{a^2} &= \sqrt{1479} \\ a &\approx 38.5 \end{aligned}$$

Find the distance from  
(1, 3) to (4, 10)

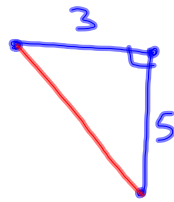


$$\text{Distance} = \sqrt{\Delta x^2 + \Delta y^2}$$

Find the distance from  
(2,4) to (7,8)

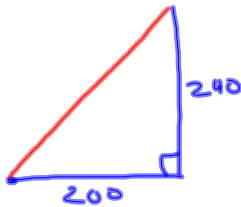
$$\begin{aligned} D &= \sqrt{\Delta x^2 + \Delta y^2} \\ &= \sqrt{5^2 + 4^2} \\ &= \sqrt{25 + 16} \\ &= \sqrt{41} \\ &\approx 6.4 \end{aligned}$$

If you walk 3 miles due East and then 5 miles due South, how far from the starting point are you?



$$\begin{aligned} 3^2 + 5^2 &= c^2 \\ 9 + 25 &= c^2 \\ \sqrt{34} &= \sqrt{c^2} \\ 5.8 &\approx c \end{aligned}$$

You run 200 feet due East and then 240 feet due North, how far from starting point are you?



$$\begin{aligned} a^2 + b^2 &= c^2 \\ 200^2 + 240^2 &= c^2 \\ 40,000 + 57,600 &= c^2 \\ \sqrt{97,600} &= \sqrt{c^2} \\ 312.4 &\approx c \end{aligned}$$