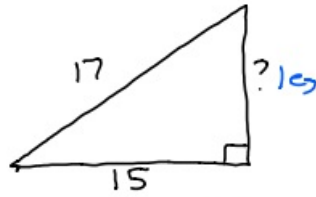


8-22-19 2nd Geo



$$\text{leg}^2 + \text{leg}^2 = \text{hyp}^2$$

$$15^2 + \text{leg}^2 = 17^2$$

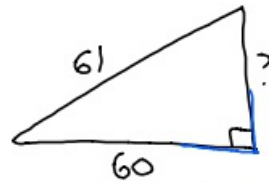
$$225 + \text{leg}^2 = 289$$

$$\begin{array}{r} 225 + \text{leg}^2 = 289 \\ -225 \quad \quad -225 \\ \hline \end{array}$$

$$\sqrt{\text{leg}^2} = \sqrt{64}$$

$$\text{leg} = 8$$

②



$$\text{leg}^2 + \text{leg}^2 = \text{hyp}^2$$

$$60^2 + \text{leg}^2 = 61^2$$

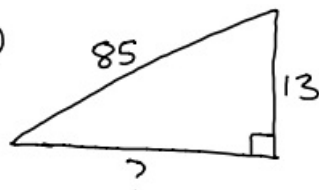
$$3600 + \text{leg}^2 = 3721$$

$$\begin{array}{r} 3600 + \text{leg}^2 = 3721 \\ -3600 \quad \quad -3600 \\ \hline \end{array}$$

$$\sqrt{\text{leg}^2} = \sqrt{121}$$

$$\text{leg} = 11$$

③



$$\text{leg}^2 + \text{leg}^2 = \text{hyp}^2$$

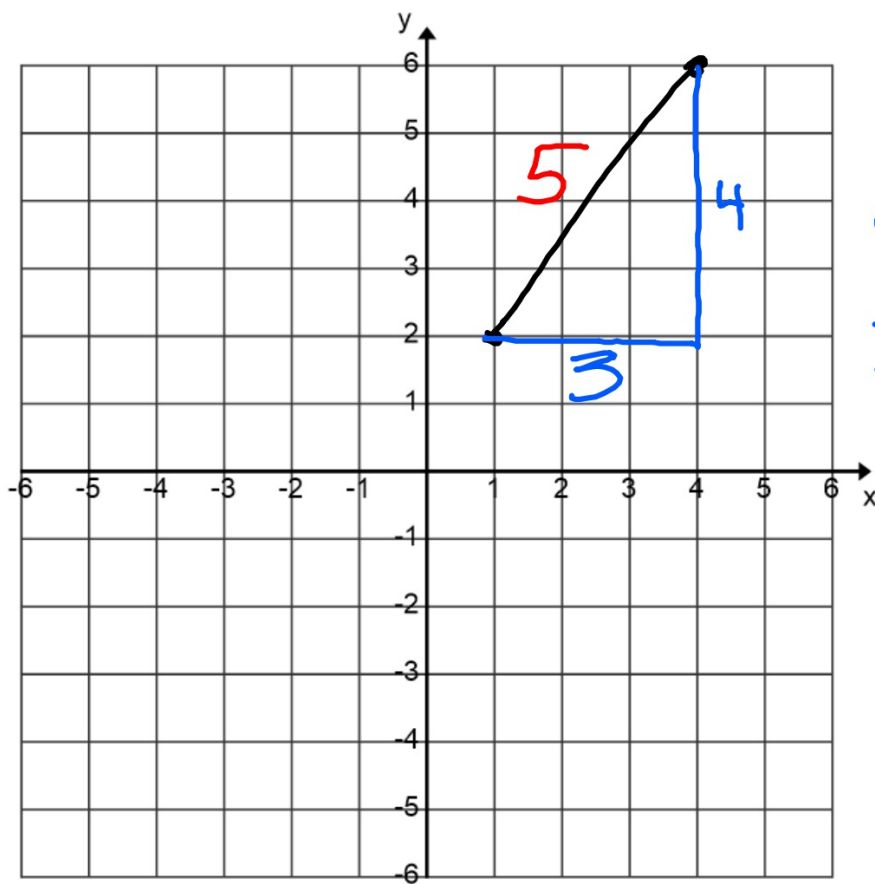
$$13^2 + \text{leg}^2 = 85^2$$

$$169 + \text{leg}^2 = 7225$$

$$\begin{array}{r} 169 + \text{leg}^2 = 7225 \\ -169 \quad \quad -169 \\ \hline \end{array}$$

$$\sqrt{\text{leg}^2} = \sqrt{7056}$$

$$\text{leg} = 84$$



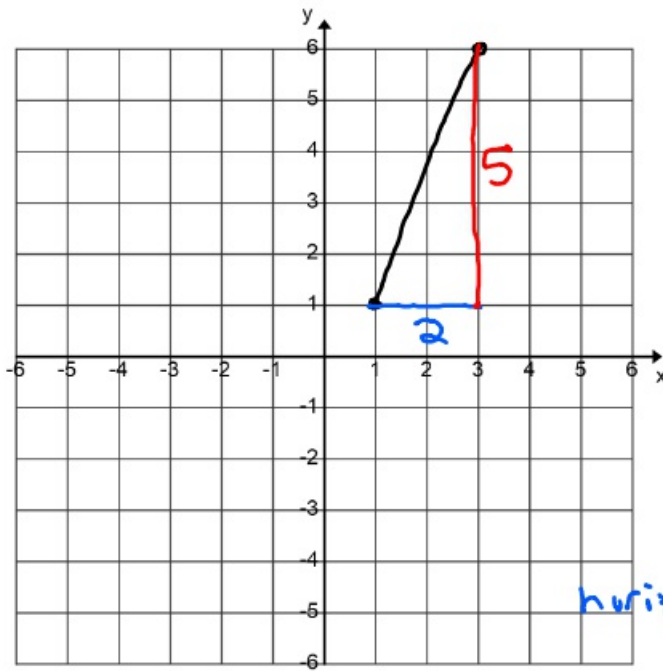
$$leg^2 + leg^2 = hyp^2$$

$$3^2 + 4^2 = hyp^2$$

$$9 + 16 = hyp^2$$

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

$$hyp = 5$$



$(1, 1)$
 $(3, 6)$
 2 5
 ↑ ↑
 horizontal leg vert. leg

④ Give distance from $(2, 3)$ to $(6, 10)$.

$(6, 10)$
 $(2, 3)$
 4 7
 ↑ ↑
 leg leg

$$\begin{aligned}
 \text{leg}^2 + \text{leg}^2 &= \text{hyp}^2 \\
 4^2 + 7^2 &= \text{hyp}^2 \\
 16 + 49 &= \text{hyp}^2 \\
 \sqrt{65} &= \sqrt{\text{hyp}^2} \\
 \text{hyp} &\approx 8.1
 \end{aligned}$$

Distance Formula

$$\begin{aligned}
 D &= \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2} \\
 &= \sqrt{\Delta x^2 + \Delta y^2}
 \end{aligned}$$

⑤ Find the distance from
(1, 4) to (6, 14).

$$\begin{array}{l} (1, 4) \\ (6, 14) \end{array}$$

legs 5 10

$$\text{leg}^2 + \text{leg}^2 = \text{hyp}^2$$

$$5^2 + 10^2 = \text{hyp}^2$$

$$25 + 100 = \text{hyp}^2$$

$$\sqrt{125} = \sqrt{\text{hyp}^2}$$

$$\text{hyp} \approx 11.2$$

⑥ Find the distance from
(-2, 4) to (-4, 10).

$$\begin{array}{l} (-2, 4) \\ (-4, 10) \end{array}$$

leg
length 2 6

$$\text{leg}^2 + \text{leg}^2 = \text{hyp}^2$$

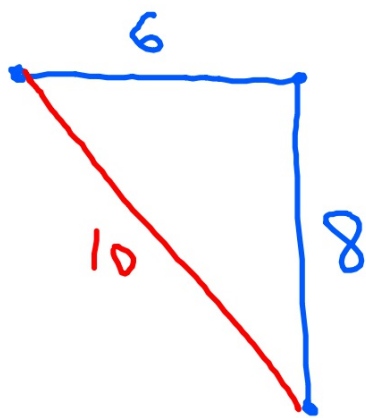
$$2^2 + 6^2 = \text{hyp}^2$$

$$4 + 36 = \text{hyp}^2$$

$$\sqrt{40} = \sqrt{\text{hyp}^2}$$

$$\text{hyp} \approx 6.3$$

⑦ I walk 6 miles due East and then 8 miles due South. How far from the starting point am I?



$$\begin{aligned} 1\text{leg}^2 + 1\text{leg}^2 &= \text{hyp}^2 \\ 6^2 + 8^2 &= \text{hyp}^2 \\ 36 + 64 &= \text{hyp}^2 \\ \sqrt{100} &= \sqrt{\text{hyp}^2} \\ \text{hyp} &= 10 \end{aligned}$$