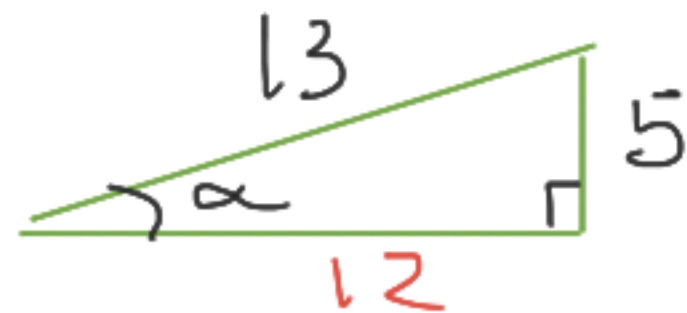4. Find the value of $\cos \alpha$ if $\alpha$ is an acute angle and sin $\alpha = 5/13$.

Dos maneras:

- Geométrica



Pitágoras: el cateto que falta mide

$$b^2 + 5^2 = 13^2 = 169 \implies b^2 = 144 \implies b = 12$$

$$\underset{\shortparallel}{} $$

$$b^2 + 25$$

$$\boxed{\cos \alpha = \frac{12}{13}}$$

- **Algebraica**

$$\operatorname{sen}\alpha = \frac{5}{13}$$
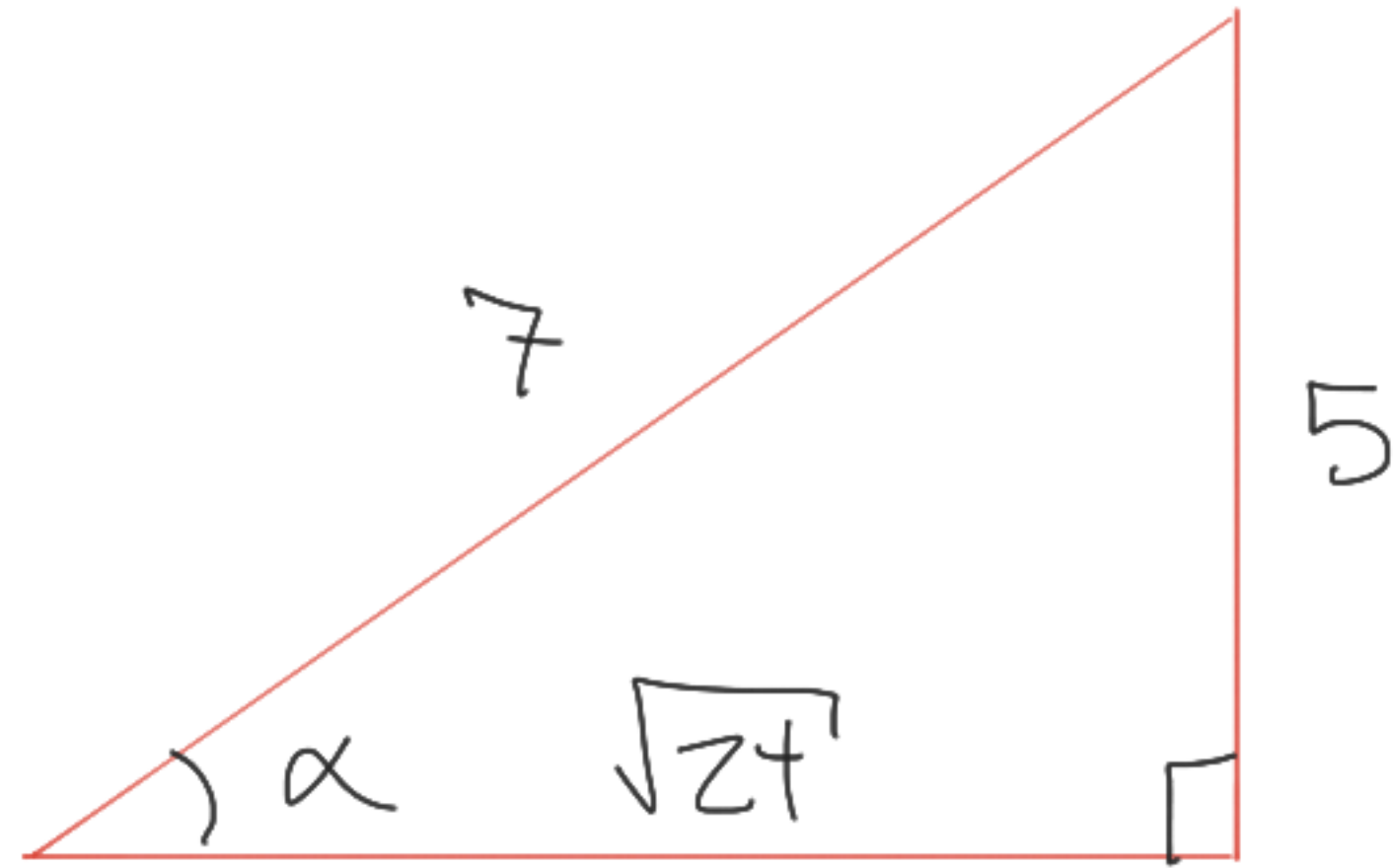
$$\cos^2\alpha + \operatorname{sen}^2\alpha = 1$$

$$\cos\alpha = \pm\sqrt{1 - \operatorname{sen}^2\alpha}$$

$$\cos\alpha = \pm\sqrt{1 - \frac{25}{169}} = \pm\sqrt{\frac{169 - 25}{169}} = \pm\sqrt{\frac{144}{169}} = \pm\frac{12}{13}$$

$\alpha$ es un ángulo agudo así que sabemos que el coseno **no** es negativo $\Rightarrow$ $\cos\alpha = \frac{12}{13}$

5. Find the value of $\cos\alpha$ if $\alpha$ is an acute angle and $\sin\alpha = 5/7$.

$$\cos\alpha = \frac{\sqrt{24}}{7}$$

7

5

$\alpha$  $\sqrt{24}$

$$\sqrt{7^2 - 5^2} = \sqrt{24}$$

$$= 2\sqrt{6}$$

21

14

10

15

$\alpha$