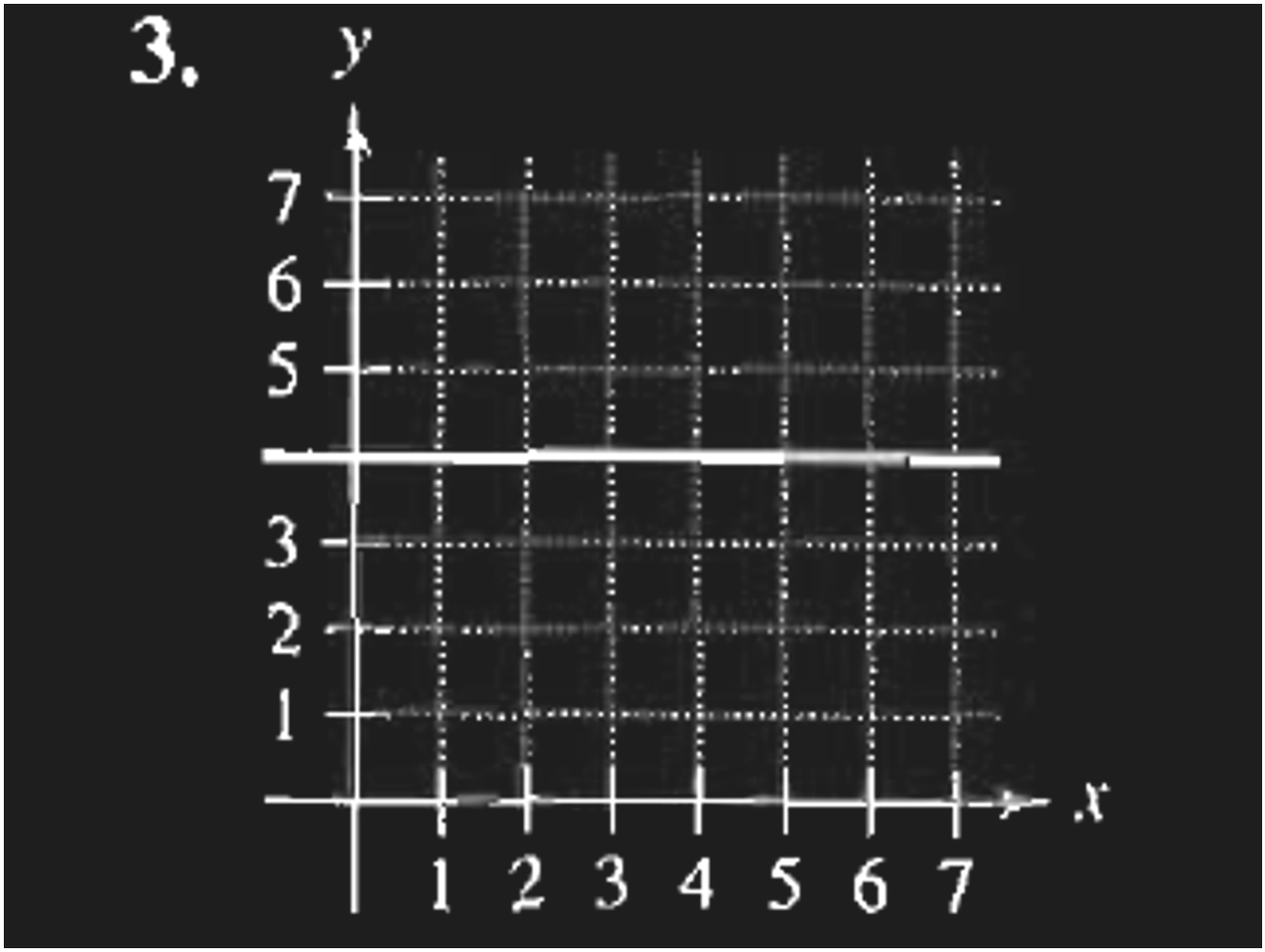
Chapter P.2 Homework

Q3:

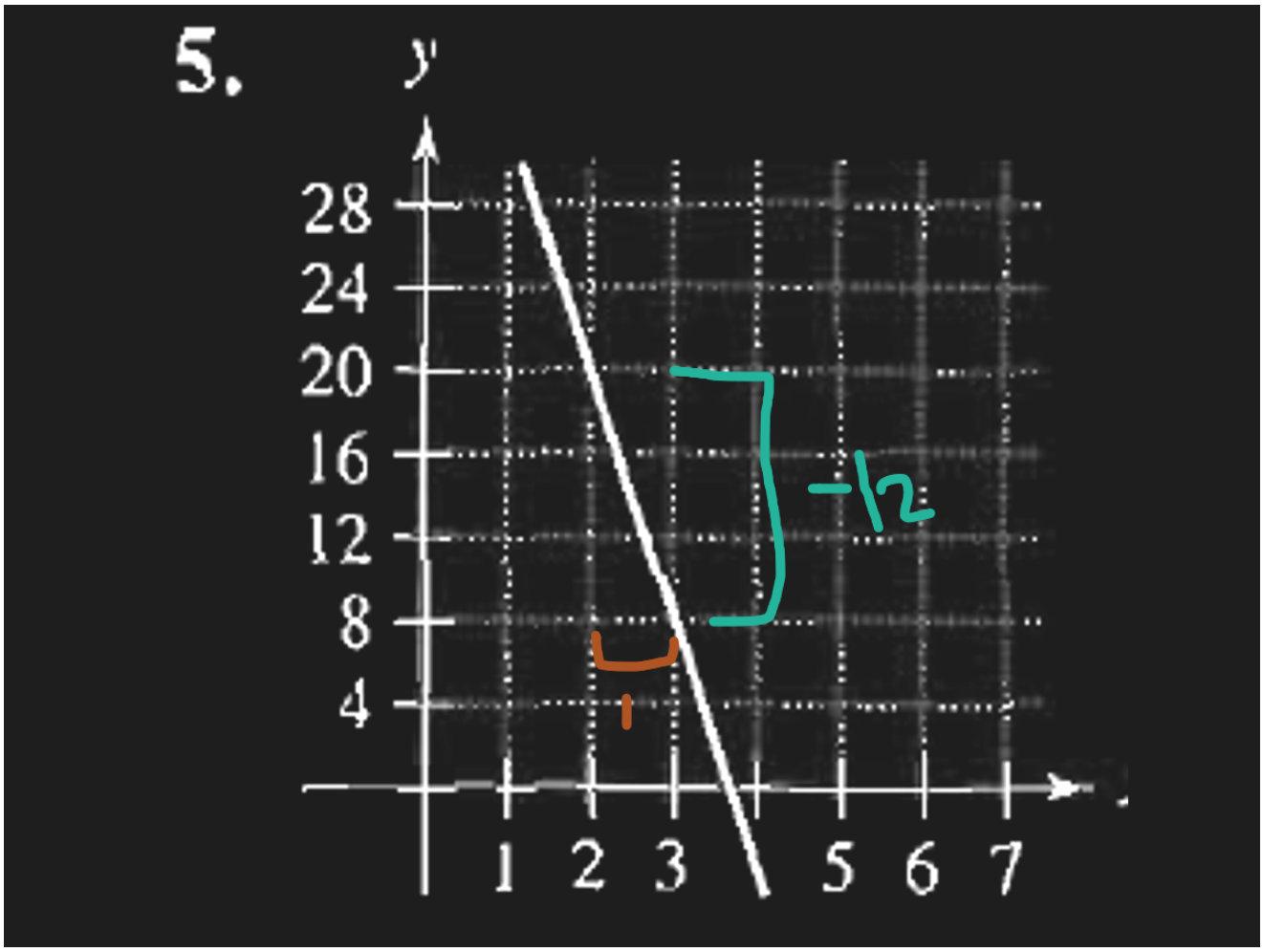
> Estimate the graph's slope:



Looks like slope of 0 to me.

Q5:

> Estimate the graph's slope:

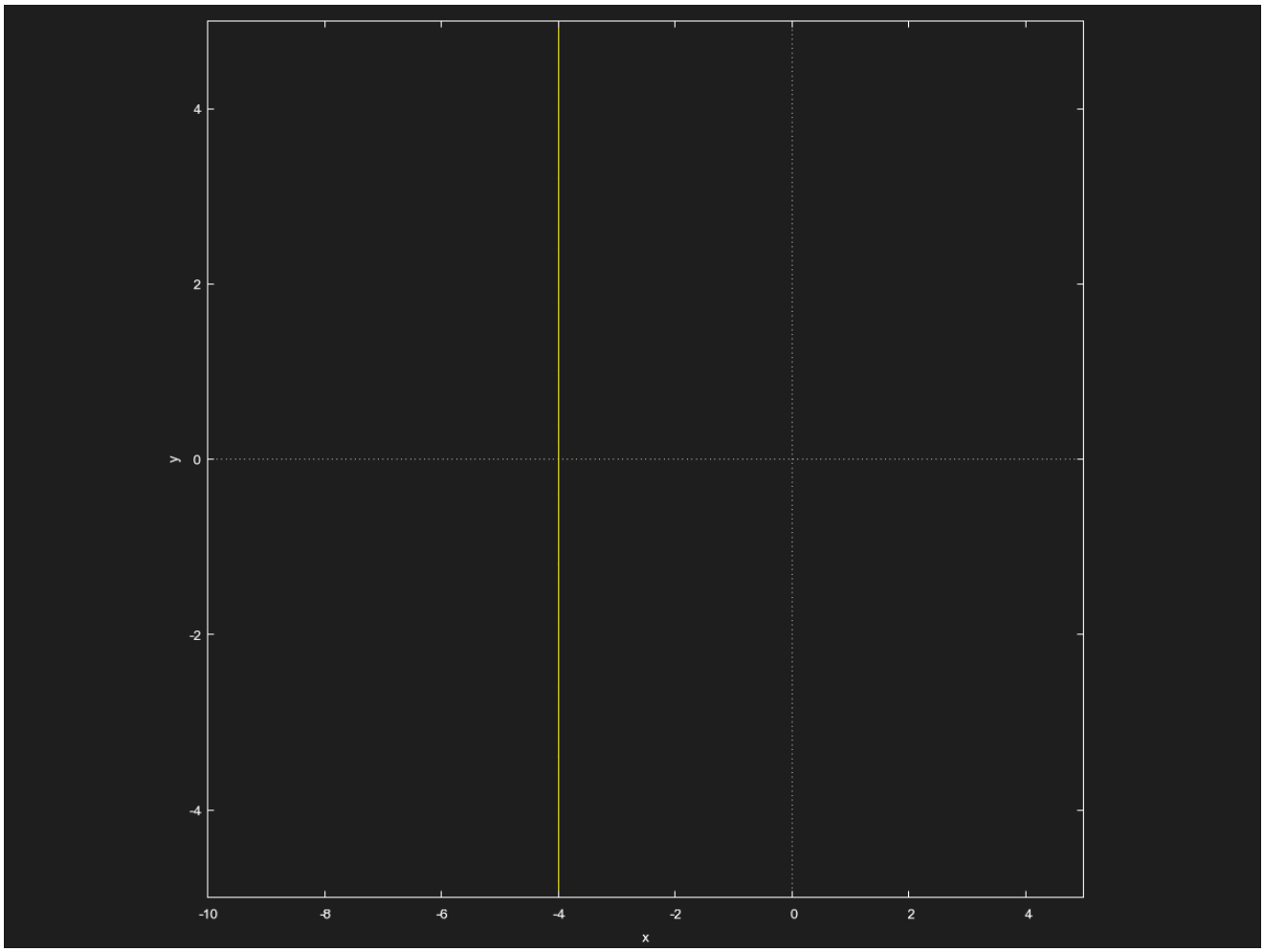


Looks like -12 slope to me.

Q16:

> Use the point $(-4, 3)$ to find a line and 3 additional points the line goes through if its slope is undefined.

Literally $x = -4$:

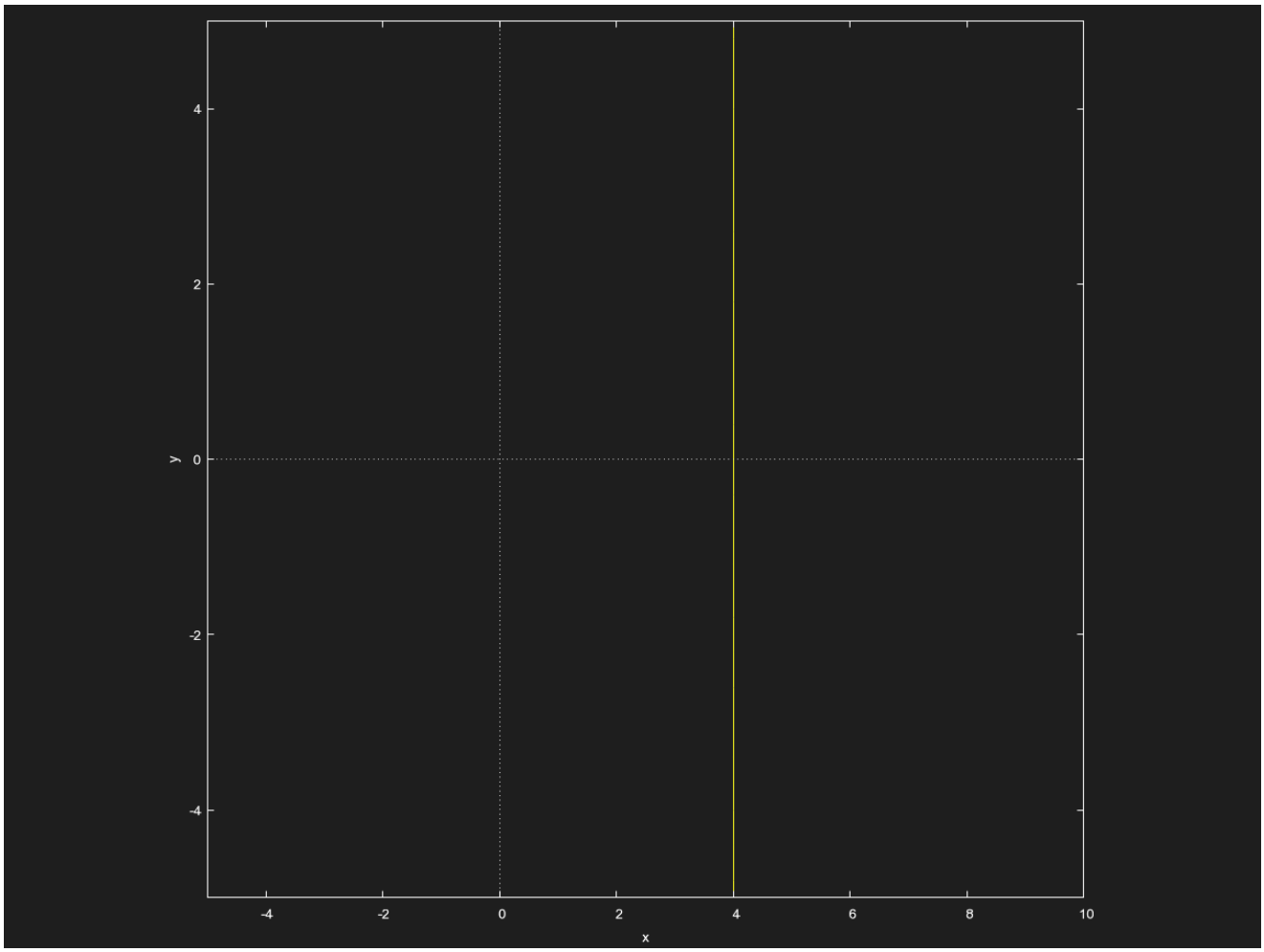


Replace the y in the points but keep x intact and you infinite points to choose from.

Q27:

> Find the slope and y intercept of the following line:
>
> $$x = 4$$

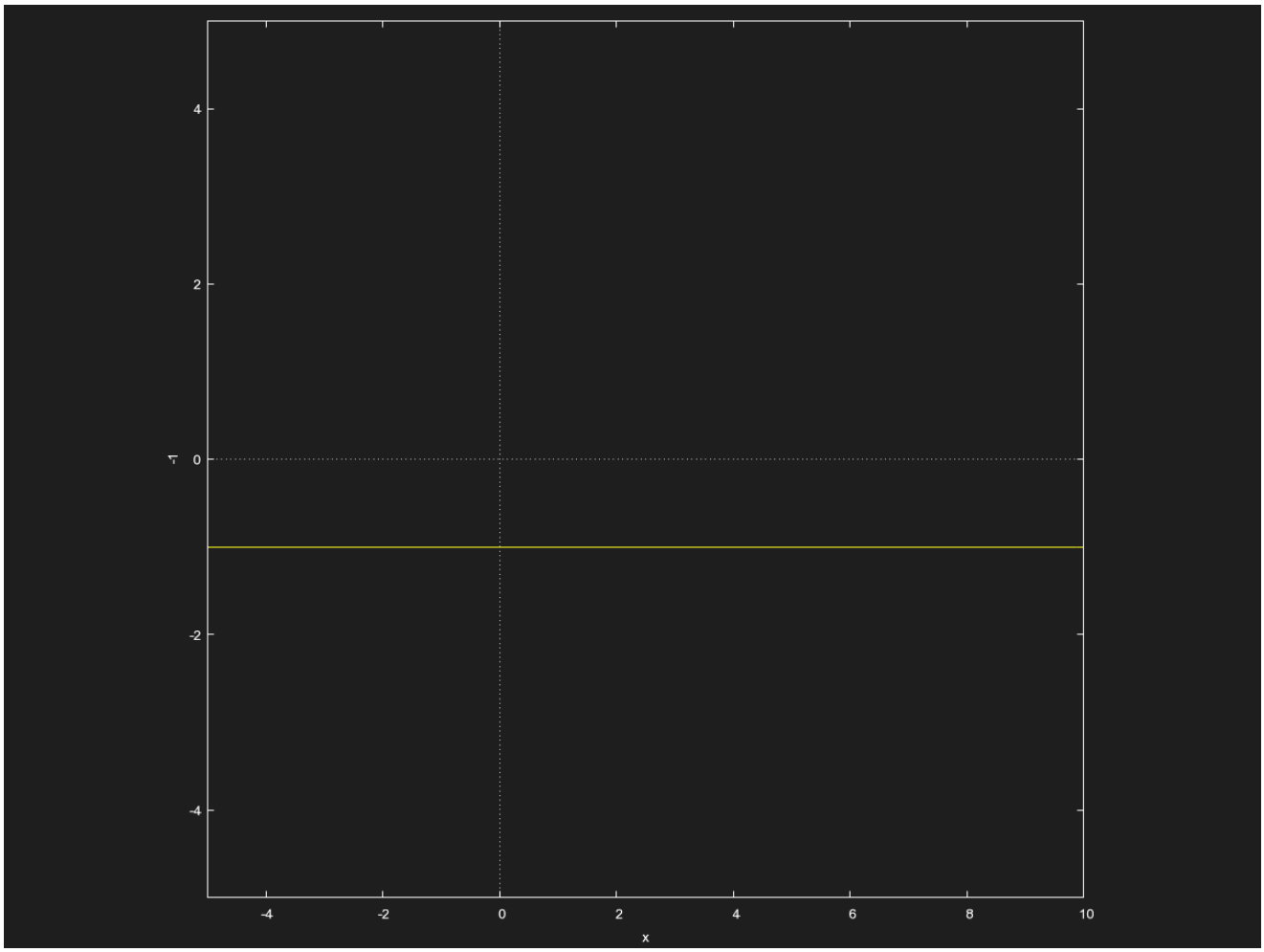
Literally undefined slope and no y intercept moment:



Q28:

> Literally the above but the equation is
>
> $$y = -1$$

Me when 0 slope and 0 as the y intercept:



Q46:

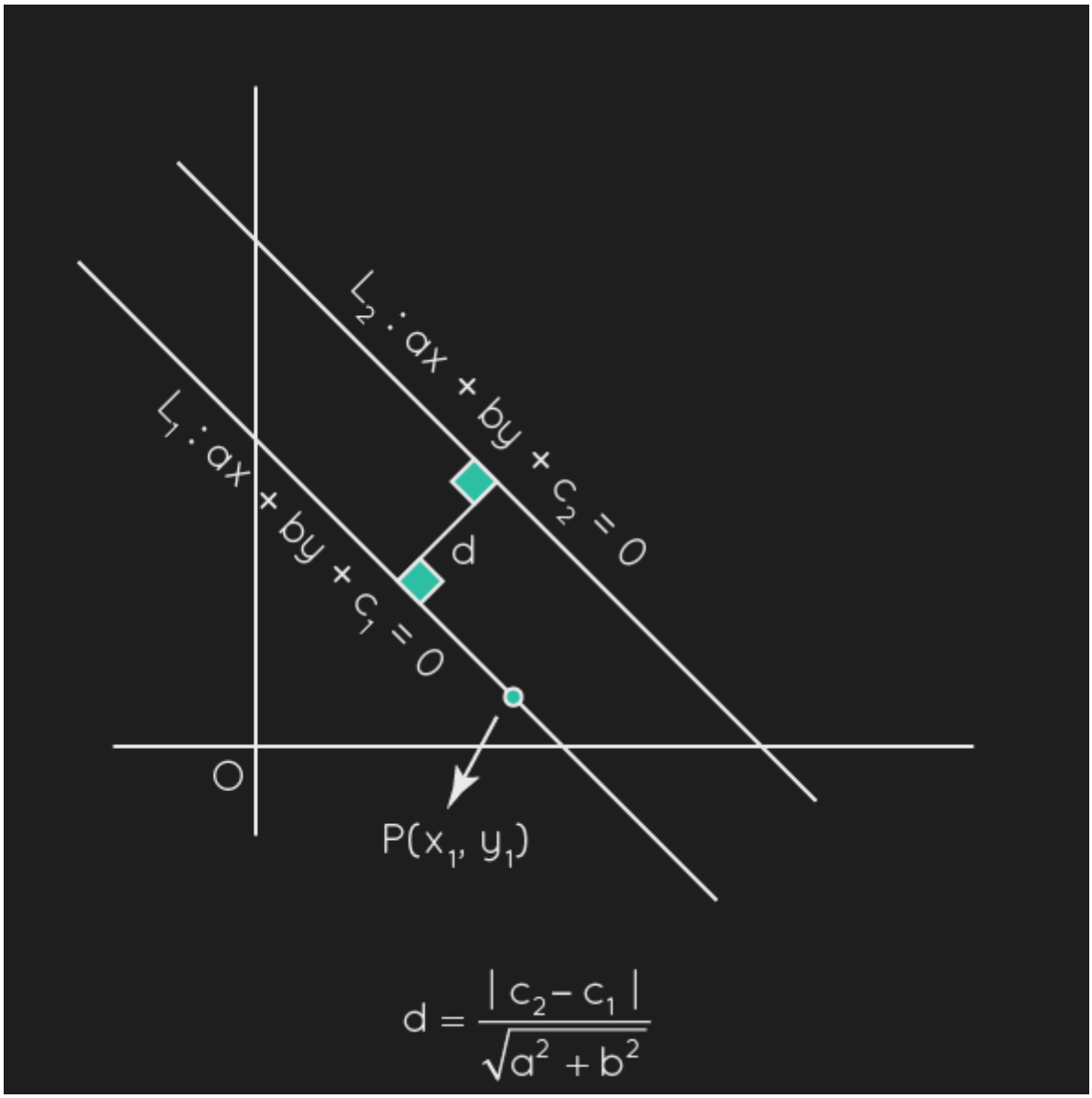
> Show that the line with intercepts $(a, 0)$ and $(0, b)$ has the following equation:
>
> $$\frac{x}{a} + \frac{y}{b} = 1, a \neq 0, b \neq 0$$

Ahem: y intercept is when $x = 0$
$\frac{0}{a} + \frac{y}{b} = 1$
$y = b$

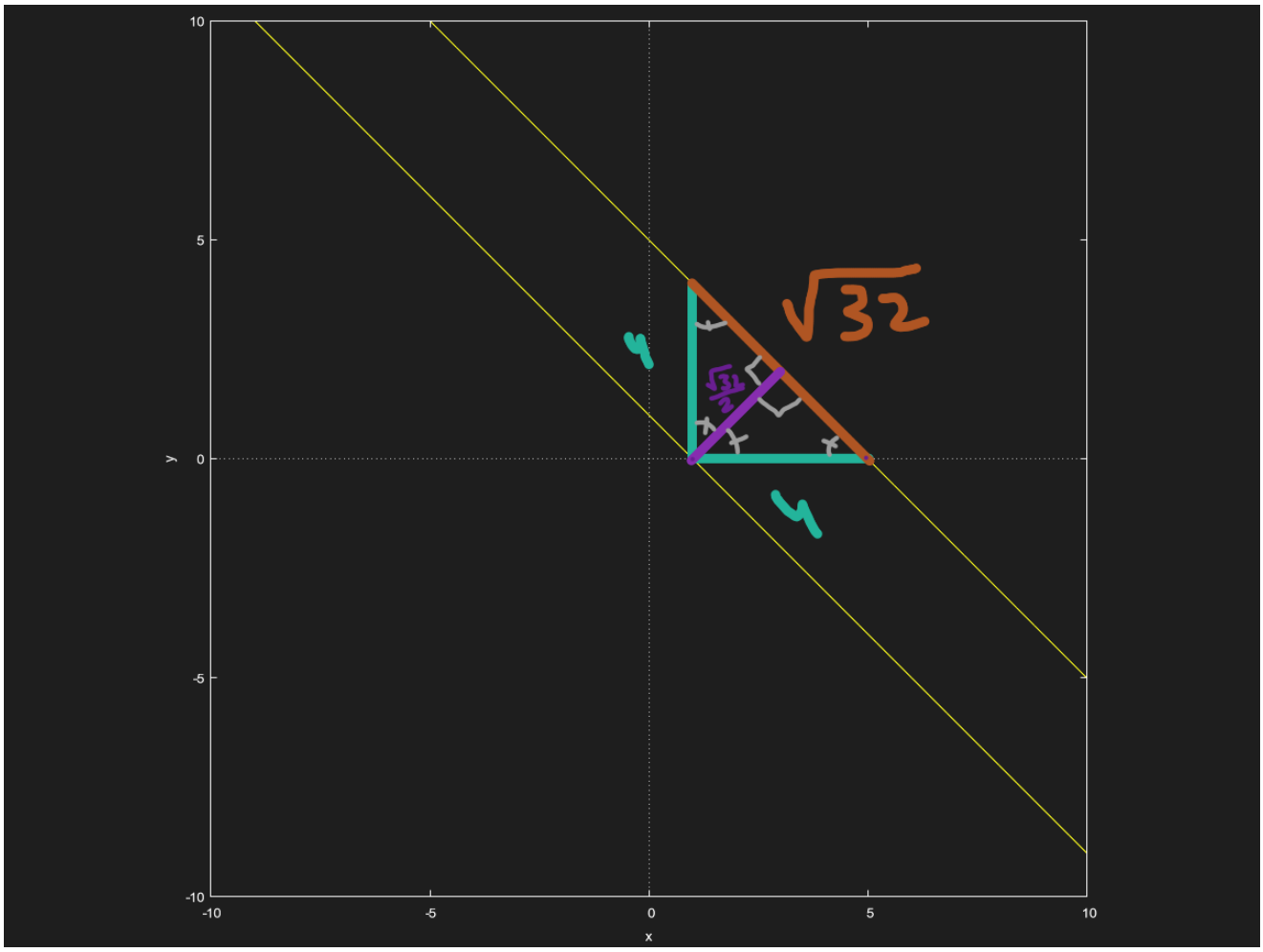
x intercept is when $y = 0$ $\frac{x}{a} + \frac{0}{b} = 1$ $x = a$ $QED.$

Q91:

> Find the distance between these lines: $\begin{cases} x + y = 1 \\ x + y = 5 \end{cases}$



$$d = \frac{|c_2 - c_1|}{\sqrt{a^2 + b^2}}$$



$$\text{Distance} = \frac{\sqrt{32}}{2} = 2\sqrt{2}$$