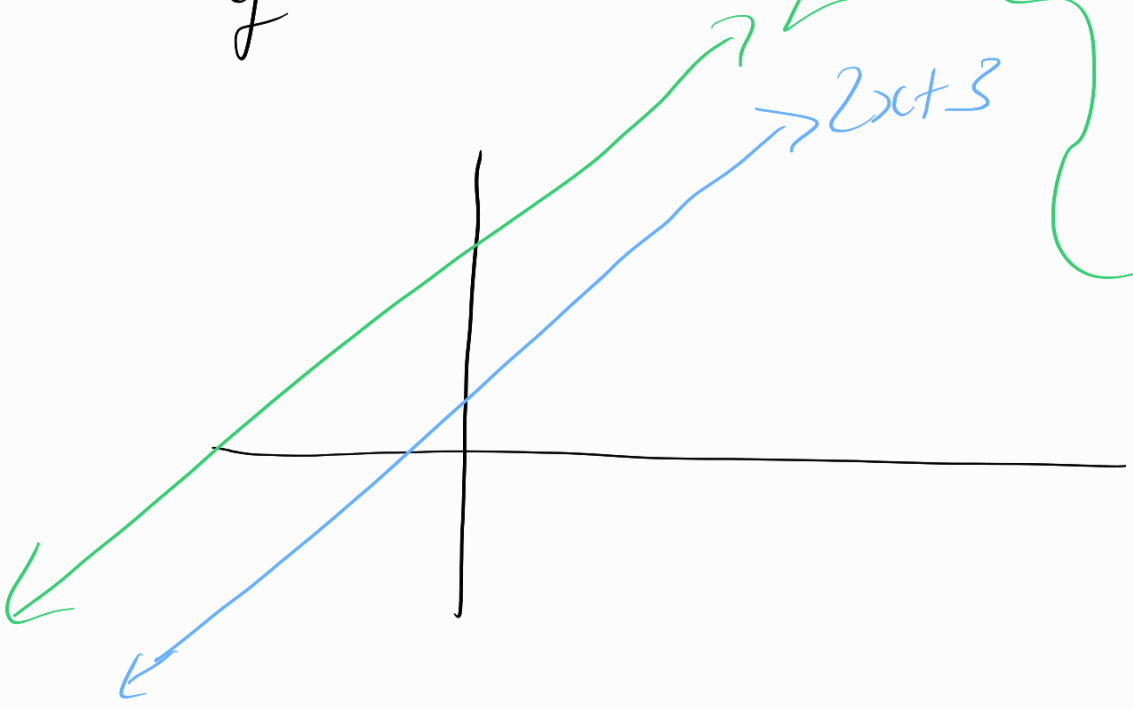
Parallel & Perpendicular lines!

$y = 2x + 3$

parallel if slope = 2, y-int ≠ 3



$y = 2x + 3$, line parallel to this, but passes thru (20, 23)

what's line eq?

$y = mx + b$

$2x + b$

$23 = 2(20) + b$

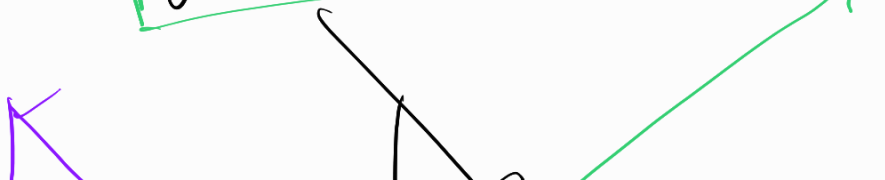
$23 - 40 = b$

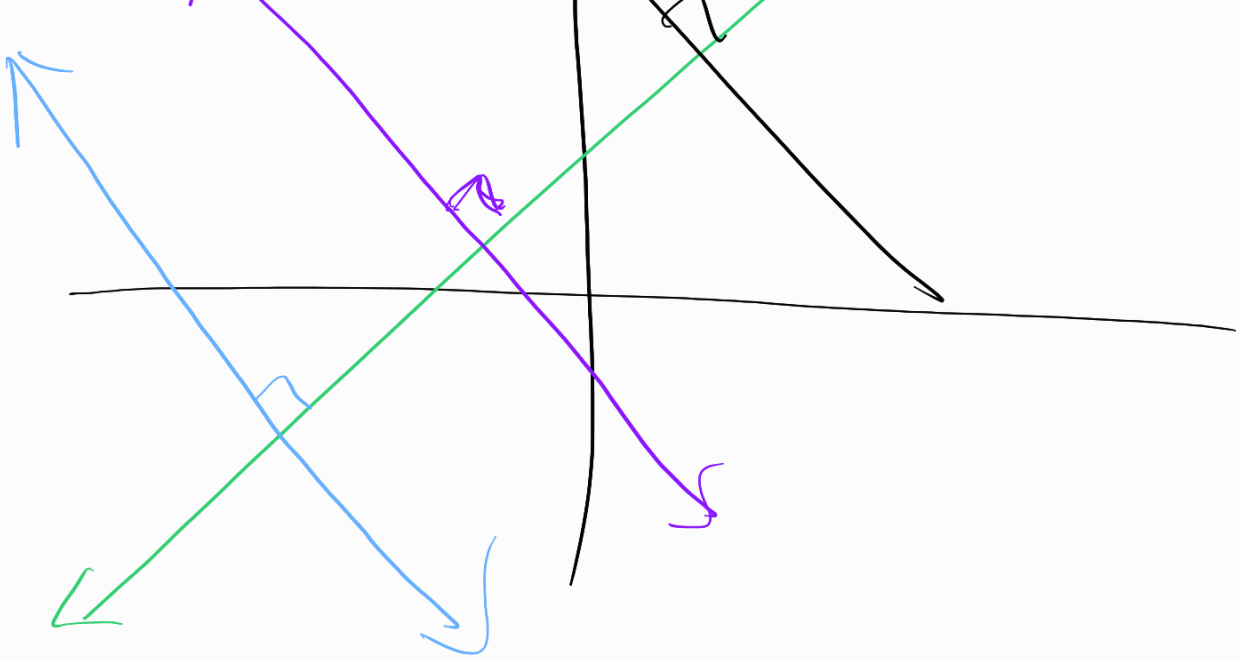
-17

$y = 2x - 17$

Perpendicular lines

$y = 2x + 3$





Give me line perpendicular to $y = 2x + 3$ and a pt is needed!!

$(1, 5)$

- $y = mx + b$

perpendicular

$$m \cdot 2 = -1$$

$$\hookrightarrow m = -\frac{1}{2}$$

$$\Rightarrow 5 = -\frac{1}{2}(1) + b$$

$$b = \frac{11}{2}$$

$$y = -\frac{1}{2}x + \frac{11}{2}$$

$$y = \frac{3}{7}x + 2$$

Q1 what is line eq. for parallel line passing (7, 2)?

$$y = \frac{3}{7}x - 1$$

Q2 what is line eq. for perpendicular line passing (3, 2)?

$$m\left(\frac{3}{7}\right) = -1$$

$$\frac{7}{3}$$

$$M = \frac{-7}{3}$$

$$y = -\frac{7}{3}x + b$$

$$2 = -\frac{21}{3} + b$$

$$1 = -7 + b$$

$$b = 2 + 7 = 9$$

$$y = -7$$

$$y = \frac{1}{3}x + 4$$

$y = mx + b$

ξ

$ax + by = c$

$\Rightarrow by = c - ax$

$\Rightarrow y = \frac{c}{b} - \frac{a}{b}x$

$slope = -\frac{a}{b}$

$y = \ln t : \frac{c}{b}$