

Key

# WS Determining the Equation of a Line

- ①  $y = 2x + 3$
- ③  $y = \frac{1}{2}x + 5$
- ⑤  $y = -\frac{1}{2}x + 4$
- ⑦  $y = \frac{2}{3}x + -6$
- ⑨  $y = -5x + 2$

⑪  $m = 2$  (3, -1)

$$y = 2x + -7$$

$$y = mx + b$$

$$-1 = 2 \cdot 3 + b$$

$$-1 = 6 + b$$

$$b = -7$$

⑬  $m = -4$  (2, 3)

$$y = -4x + 11$$

$$y = mx + b$$

$$3 = -4 \cdot 2 + b$$

$$3 = -8 + b$$

$$b = 11$$

⑮  $m = \frac{2}{3}$  (0, 3) b because  $x = 0$

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

⑰  $m = -\frac{3}{5}$  (-1, -4)

$$y = -\frac{3}{5}x + -4\frac{3}{5}$$

$$y = mx + b$$

$$-4 = -\frac{3}{5} \cdot -1 + b$$

$$-4 = \frac{3}{5} + b$$

$$b = -4 + \frac{3}{5}$$

$$b = -4\frac{3}{5}$$

⑲  $m = 0$  ( $\frac{1}{4}$ , 2)

↑ horizontal line

$$y = 0x + 2$$

$$y = 0 + 2$$

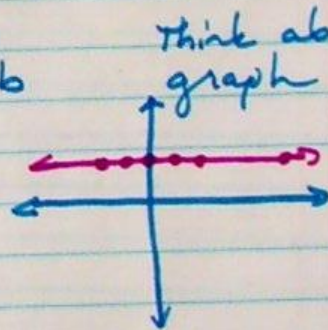
$$y = 2$$

$$y = mx + b$$

$$2 = 0 \cdot \frac{1}{4} + b$$

$$2 = 0 + b$$

$$b = 2$$



x	y
-2	2
-1	2
0	2
1	2
2	2

$y = 2$

⑳ (4, 5) (2, 1)

$$m = \frac{5-1}{4-2} = \frac{4}{2} = 2$$

$$y = 2x + -3$$

$$y = mx + b$$

$$1 = 2 \cdot 2 + b$$

$$1 = 4 + b$$

$$b = -3$$

㉓ (3, 1) (5, 2)

$$m = \frac{1-2}{3-5} = \frac{-1}{-2} = \frac{1}{2}$$

$$y = mx + b$$

$$2 = \frac{1}{2} \cdot 5 + b$$

$$2 = \frac{5}{2} + b$$

$$b = 2 - \frac{5}{2}$$

$$b = \frac{4}{2} - \frac{5}{2} = -\frac{1}{2}$$

㉒ (1, 2) (4, 4)

$$m = \frac{2-4}{1-4} = \frac{-2}{-3} = \frac{2}{3}$$

$$y = \frac{2}{3}x + 1\frac{1}{3}$$

$$y = mx + b$$

$$4 = \frac{2}{3} \cdot 4 + b$$

$$4 = \frac{8}{3} + b$$

$$b = 4 - \frac{8}{3}$$

$$b = \frac{12}{3} - \frac{8}{3}$$

$$b = \frac{4}{3} = 1\frac{1}{3}$$

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



27)  $(0, -1)$   $(-2, 3)$    
 This is b/c  $x=0$ .   
 $m = \frac{-1-3}{0-(-2)} = \frac{-4}{2} = -2$    
 $y = mx + b$    
 $y = -2x + -1$

29)  $(-2, 8)$   $(1, 2)$    
 $m = \frac{8-2}{-2-1} = \frac{6}{-3} = -2$    
 $y = mx + b$    
 $2 = -2 \cdot 1 + b$    
 $2 = -2 + b$    
 $b = 4$    
 $y = -2x + 4$

31)  $(-1, 3)$   $(2, 0)$    
 $m = \frac{3-0}{-1-2} = \frac{3}{-3} = -1$    
 $y = mx + b$    
 $0 = -1 \cdot 2 + b$    
 $0 = -2 + b$    
 $b = 2$    
 $y = -x + 2$    
 $y = -x + 2$