

Writing Linear Equations

Step 1: find the slope from a graph or table, or identify from a description $\frac{\Delta y}{\Delta x}$ per Δx ?

Step 2: Plug in values for x, y, m into $y = mx + b$ equation

Step 3: solve for b

Ex:

x	3	4	5	6
y	8	10	12	14

$$\frac{\Delta y}{\Delta x} = \frac{10 - 8}{4 - 3} = \frac{2}{1} = 2$$

$$y = mx + b \quad (3, 8), m = 2$$

$$(8) = 2(3) + b$$

$$8 = 6 + b$$

$$\begin{array}{r} -6 \\ \hline 2 = b \end{array}$$

$$\boxed{y = 2x + 2}$$

m = rate of change in situation

b = initial value in situation

Non-linear relationship: rate of change varies between pairs of points (not constant)