

10/23 Algebra 1 - Downing

Bellwork Determine if the relation is a linear function

x	y
1	5
3	10
5	15
7	25

+2, +5, +5, +10

$\frac{5}{2}, \frac{5}{2}, \frac{10}{2}$

x	y
3	2
8	4
18	8
23	10

+5, +2, +4, +2

$\frac{2}{5}, \frac{4}{10}, \frac{2}{5}$
 $\frac{2}{5}$

$y = mx + b$
 $2 = \frac{2}{5}(3) + b$
 $(\frac{2}{5})2 = \frac{6}{5} + b(\frac{5}{5})$
 $\frac{10}{5} = \frac{6}{5} + \frac{5b}{5}$

Not a Linear Function

Yes, Linear Function $\frac{10 = \frac{6}{5} + 5b}{\frac{4}{5} = \frac{5b}{5}}$
 - constant rate of change $\frac{4}{5} = b$
 $y = \frac{2}{5}x + \frac{4}{5}$

Ex) Write an equation of the line that goes through:

$(3, 5), (-3, 4)$
 $-6 \left(\begin{matrix} 3 & 5 \\ -3 & 4 \end{matrix} \right) -1$ $m = -\frac{1}{6} = \frac{1}{6}$

$y = \frac{1}{6}x + 4\frac{1}{2}$

$y = mx + b$
 $5 = \frac{1}{6}(3) + b$
 $5 = \frac{1}{2} + b$
 $4\frac{1}{2} = b$

Ex) $(-1, -2), (-1, 0)$
 $0 \left(\begin{matrix} -1 & -2 \\ -1 & 0 \end{matrix} \right) +2$ $m = \frac{2}{0}$ undefined

$x = -1$
 HOY \downarrow $y =$ slope
 VUX \downarrow $x =$ undefined slope

Ex) $(2, 4), (-3, 4)$
 $-5 \left(\begin{matrix} 2 & 4 \\ -3 & 4 \end{matrix} \right) 0$ $m = \frac{0}{-5} = 0$

$4 = 0(x) + b$
 $4 = b$

Ex) Slope is 9, y-int = 5 $y = 9x + 5$

HW Worksheet #1, 2, 5, 7, 9.