10/22 Algebra 1 - Downing

Bellwork - Determine if the relation is a linear function:

x	y
2	1
5	5
11	13
20	25

+3, +4, +6, +8, +9, +12

$\frac{4}{3}$ $\frac{8}{6}$ $\frac{12}{9}$

$\frac{4}{3}$ $\frac{4}{3}$

All the same rate of change

Linear

x	y
2	3
4	6
6	12
8	24

+2, +3, +2, +6, +2, +12

$\frac{3}{4}$ $\frac{6}{2}$ $\frac{12}{2}$

3 6

Not the same

Not Linear

Continue with WS 4.1A Writing Linear Equations

practice more problems → see attached

HW p. 179 # 4-24 evens and 25, 30 on Big Ideas

Algebra 1 Name Key

WS 4.1A Writing Linear Equations

Find the slope of the line through each pair of points.

1) (9, 12), (16, –4)

+7 (9 12) -16
16 -4

$m = \frac{-16}{7}$

2) (12, 16), (–4, 10)

-16 < 12 16 > -6
-4 10

$m = \frac{-6}{-16} = \boxed{\frac{3}{8}}$

3) (16, –4), (10, –15)

-6 (16 -4) -11
10 -15

$m = \frac{-11}{-6} = \boxed{\frac{11}{6}}$

4) (8, 9), (12, 16)

+4 (8 9) +7
12 16

$m = \boxed{\frac{7}{4}}$

Write the slope-intercept form of the equation of the line through the given points.

5) through: (2, 1) and (–2, 4)

-4 (2 1) +3
-2 4

$\frac{3}{-4}$

$y = mx + b$

$1 = -\frac{3}{4}(2) + b$

$1 = -\frac{6}{4} + b$

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

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

6) through: (–1, 2) and (–1, –3)

$x = -1$

7) through: $(0, -3)$ and $(1, -5)$

$+1 \left(\begin{matrix} 0 & -3 \\ 1 & -5 \end{matrix}\right) -2 \quad m = \frac{-2}{1} = -2$

$y = mx + b$

$-5 = -2(1) + b$

$-5 = -2 + b$

$+2 \quad +2$

$-3 = b$

$y = -2x - 3$

8) through: $(0, -3)$ and $(4, 0)$

$+4 \left(\begin{matrix} 0 & -3 \\ 4 & 0 \end{matrix}\right) +3 \quad m = \frac{3}{4}$

$y = mx + b$

$0 = \frac{3}{4}(4) + b$

$0 = 3 + b$

$-3 \quad -3$

$-3 = b$

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

9) through: $(1, 1)$ and $(0, 0)$

$-1 \left(\begin{matrix} 1 & 1 \\ 0 & 0 \end{matrix}\right) -1 \quad m = \frac{-1}{-1} = 1$

$y = mx + b$

$0 = 1(0) + b$

$0 = 0 + b$

$-0 \quad -0$

$0 = b$

$y = 1x + 0$

$y = x$

parent function

10) through: $(-3, -5)$ and $(0, -1)$

$+3 \left(\begin{matrix} -3 & -5 \\ 0 & -1 \end{matrix}\right) +4 \quad m = \frac{4}{3}$

$y = mx + b$

$-1 = \frac{4}{3}(0) + b$

$-1 = b$

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

11) $f(0) = 2$, $f(2) = 4$

$(0, 2) \quad (2, 4)$

$+2 \left(\begin{matrix} 0 & 2 \\ 2 & 4 \end{matrix}\right) +2 \quad m = \frac{2}{2} = 1$

$y = mx + b$

$2 = 1(0) + b$

$2 = 0 + b$

$-0 \quad -0$

$2 = b$

$y = 1x + 2$

12) $f(4) = -3$, $f(0) = -2$

$-4 \left(\begin{matrix} 4 & -3 \\ 0 & -2 \end{matrix}\right) +1$

$m = -\frac{1}{4}$ or $-\frac{1}{4}$

$y = mx + b$

$-2 = -\frac{1}{4}(0) + b$

$-2 = 0 + b$

$-0 \quad -0$

$-2 = b$

$y = -\frac{1}{4}x - 2$