5.3 Homework - Pg. 150 All

For Exercises 1–8, state whether the table, graph, or equation represents a linear function. Explain why or why not.

1.

x	−1	0	1	2	3
y	−3	−1	1	3	5

+1 +1 +1 +1
+2 +2 +2 +2

yes, blc the rate of change (slope) stays constant.

$$\frac{\Delta y}{\Delta x} = 2$$

2.

x	−3	−1	1	3	5
y	9	1	1	3	25

+2 +2 +2
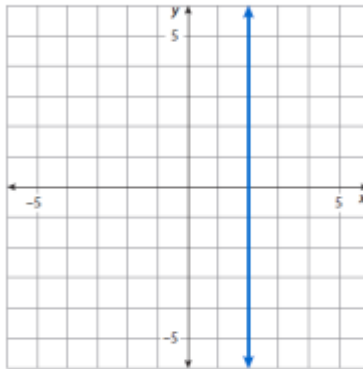*−8 +0 +2 +22*

no, blc the rates of change are *not* constant

3.

yes, because it is a non-vertical line

4.

no, because this is a vertical line, where the input value has more than one output value.

5. $y = 4x + 7$

6. $6x − 3y = 12$

7. $x = 12$

8. $y = 2x^2 + 4$

5) yes, equation is in $y=mx+b$ form where m (slope) is 4 and b (y-int) is 7.
6) yes, equation can be rewritten in $y=mx+b$ ($y=2x−4$) where m=2 and b=−4.
7) no, cannot be rewritten in $y=mx+b$ form (vertical line)
8) no, cannot be rewritten in $y=mx+b$ form (quadratic function – highest exponent is 2)

For Exercises 9–12, choose the equation that best represents the linear function described in the given table or graph.

9.

x	y
−4	0
0	8
4	16

+4 +8
+4 +8

A. $y = −2x + 8$
B. $y = 2x + 4$
C. $y = 2x + 8$
D. $y = −2x + 4$

$$\frac{\Delta y}{\Delta x} = \frac{8}{4} = 2$$

10.

x	y
0	6
2	4
4	2

+2 −2
+2 −2

A. $y = 2x + 6$
B. $y = −x + 6$
C. $y = x + 6$
D. $y = −2x + 6$

$$\frac{\Delta y}{\Delta x} = \frac{−2}{2} = −1$$