

1) a. D: {-6, -2, 2, 3, 4, 73}

R: {-7, -4, 2, 9, 4, 73}

NOT A FUNCTION (y=3)

b. D: {4, 2, 0, 83}

R: {3, 4, 63}

c. D: (-∞, ∞)

R: (-∞, ∞)

yes a function
not 1 to 1

yes a 1 to 1
function

2) a. yes d = 8

$$a_1 = 4$$

$$a_n = a_{n-1} + 8$$

b. yes d = -3.5

$$a_1 = 6$$

$$a_n = a_{n-1} - 3.5$$

c. no

$$\begin{array}{c} 13, 18, 24, 29 \\ \swarrow \quad \searrow \\ 5 \quad 6 \end{array}$$

3) a. $f(-3) = 5 - (2(-3)+1)$
 $= 5 - (-6+1)$
 $= 5 - (-5)$
 $= 10$

b. $f(7) = 5 - (2(7)+1)$
 $= 5 - (14+1)$
 $= 5 - 15$
 $= -10$

4) a. positive

b. (2, 3)
 $m = \frac{7-3}{7-2} = \frac{4}{5}$
 $y - 3 = \frac{4}{5}(x-2)$

5) $y = 4.5(5) + 3$ residual = $\frac{29-25.5}{3.5}$

$$\begin{array}{r} y = 22.5 + 3 \\ y = 25.5 \end{array}$$

6) a. $a_1 = 6.5$

$$a_n = a_{n-1} + 2.5$$

b. $a_n = 6.5 + (n-1)2.5$

$$a_n = 6.5 + 2.5n - 2.5$$

$$a_n = 4 + 2.5n$$

c. $a_7 = 4 + 2.5(7)$

$$a_7 = 4 + 17.5$$

$$a_7 = 21.50$$

would cost \$ 21.50

7) a. 22, 28, 34, 40, 46

b. 11, 10.5, 7, 3.5, 0, -3.5

2) a. $a_1 = 22 + (n-1)6$
 $= 22 + 6(n-1)$
 $= 16 + 6n$

$$a_n = 16 + 6n$$

3) a. $a_1 = 14 - 3.5$

$$a_1 = 10.5$$

$$a_n = a_{n-1} - 3.5$$

8) $a_1 = 1$ $d = .75$

$$\begin{aligned} a_n &= 1 + (n-1)(.75) \\ a_n &= 1 + .75n - .75 \end{aligned}$$

$$a_n = .25 + .75n$$

$$a_{31} = .25 + .75(31)$$

$$a_{31} = .25 + 23.25$$

$$a_{31} = 23.50$$

Deposit \$23.50

9) a. $f(x) = 7x + 6$

b. $f(15) = 7(15) + 6$
 $= 116$

she will make \$116

c. extrapolation