Sec I – Term 3 Name Key ID: 1

Self-Check #12 – Evaluating Functions Date_____ Period_____

Directions: In each of the following problems, you are given one of the representations of linear function. Complete the representations and answer the questions.

Context

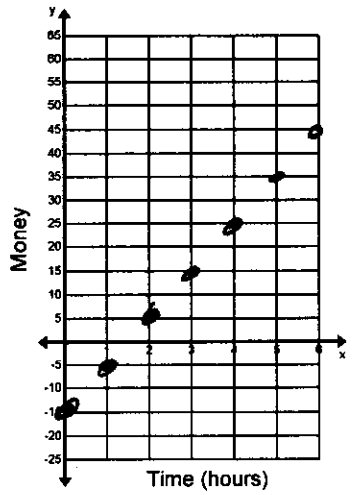
I make $10 for each hour I work less $15 for taxes

Table

hours	money
0	-15
1	-5
2	5
3	15
4	25
5	35

(Δx: +1, +1, +1; Δy: +10, +10)

Graph



Rate of Change:

$m = \frac{\Delta y}{\Delta x} = \frac{10}{1} = 10$

Start Point (y-intercept):

$b = -15$

Equation: $f(x) = mx + b$

$f(x) = 10x - 15$

Questions

a) discrete or continuous

b) domain $\{0, 1, 2, \ldots\}$

c) range $\{-15, -5, 5, \ldots\}$

d) What is the value at $f(8)$? $= 10(8) - 15$

$= 80 - 15$

$= 65$

e) What is the value at $f(12)$? $= 10(12) - 15$

$= 120 - 15$

$= 105$

f) What x-value makes $f(x) = 175$ true?

$175 = 10x - 15$

$+15 \quad +15$

$190 = 10x$

$19 = x$

2.

Context

You and your friends go to the rock climbing. It costs $10 to get in and $2 each session.

Table

Δx	x	y	Δy
	0	10	
+1	1	12	+2
+1	2	14	+2
+1	3	16	+2
	4	18	
	5	20	
	6	22	

Questions

a) discrete or continuous

b) domain
$\{0, 1, 2, \ldots\}$

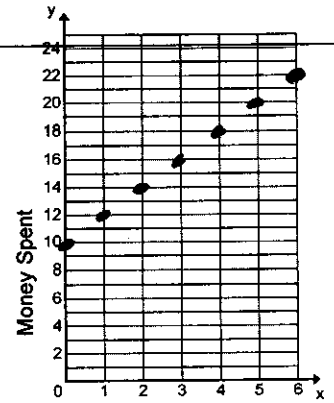
c) range
$\{10, 12, 14, \ldots\}$

d) What is the value at
$f(10)? = 2(10)+10$
$= 20+10$
$= 30$

e) What is the value at
$f(15)? = 2(15)+10$
$= 30+10$
$= 40$

f) What x-value makes
$f(x) = 40$ true?
$40 = 2x+10$
$-10 \quad -10$
$30 = 2x$
$15 = x$

Graph



Rate of Change (Slope):
$m = \frac{\Delta y}{\Delta x} = \frac{2}{1} = 2$

Start Point (y-intercept):
$b = 10$

Equation:
$f(x) = 2x + 10$

3

Context

I started at 30 feet from the house. Each second that I walk I get 3 feet closer to the house.

Table

Δx	x	y	Δy
	0	30	
+1	1	27	-3
+1	2	24	-3
+1	3	21	-3
	4	18	
	5	15	
	6	12	

Questions

a) discrete or continuous

b) domain
$[0, 10]$

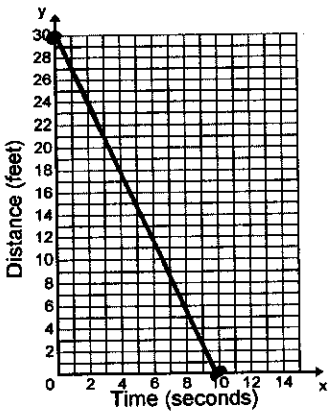
c) range
$[0, 30]$

d) What is the value at
$f(7) = -3(7)+30$
$= -21+30$
$= 9$

e) What is the value at
$f(10)? = -3(10)+30$
$= -30+30$
$= 0$

f) What x-value makes
$f(x) = 9$ true?
$9 = -3x+30$
$-30 \quad -30$
$-21 = -3x$
$7 = x$

Graph



Rate of Change:
$m = \frac{\Delta y}{\Delta x} = \frac{-3}{1}$

Start Point (y-intercept):
$b = 30$

Equation: $f(x) = -3x + 30$
$m \quad b$