

Review: Applications of Functions and Linear/Nonlinear Functions

1.) Sean is in Hawaii and plans to spend a day jet-skiing. To rent the Jet Ski, he must pay a \$50 fee. Then, it's \$10 for every hour he uses it.

additional fee slope

a.) Identify the independent and dependent variables

x: time in hours

y: total cost

b.) What values of the domain and range make sense for this situation?

Domain: zero and positives (no negative hours)

Range: 50 and up (starting value is 50)

c.) Write a rule (equation) to represent the total cost for jet-skiing.

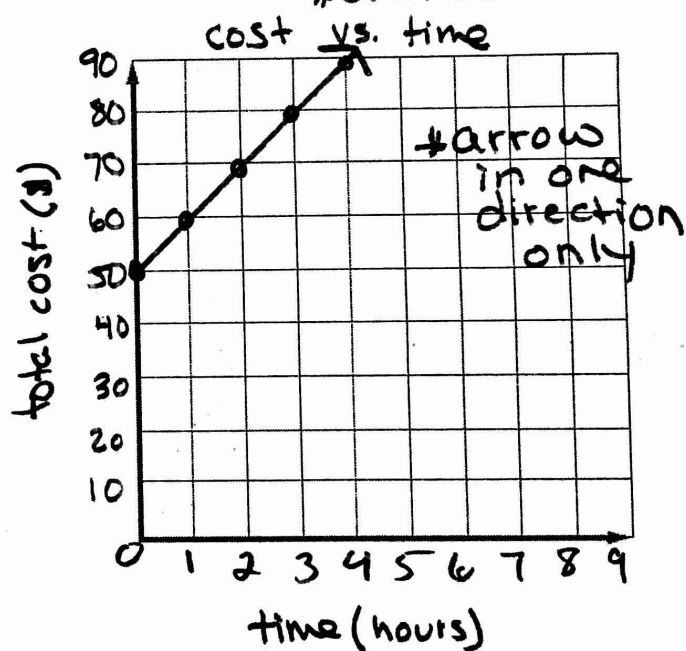
$$y = 10x + 50$$

d.) Make a table for this situation.

x	$y = 10x + 50$	y
0	$10(0) + 50$	50
1	$10(1) + 50$	60
2	$10(2) + 50$	70
3	$10(3) + 50$	80
4	$10(4) + 50$	90

No negatives in table!

e.) Graph the equation below.
#even intervals



f.) How much will it cost for Sean to Jet Ski for two hours?

$$y = 10(2) + 50$$

\$ 70

x = 2

g.) Is this a linear relationship?

Yes

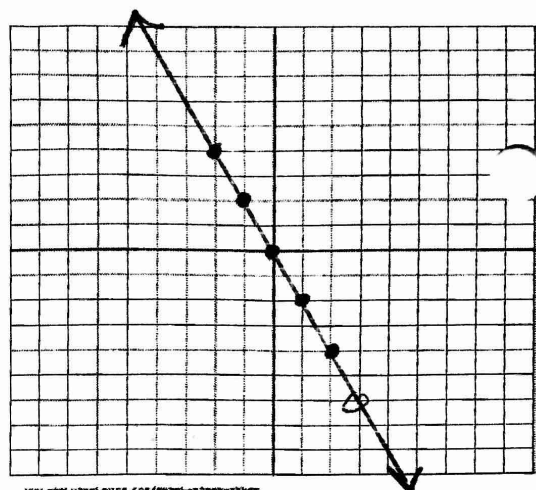
h.) Is this a function?

Yes

2.) $y = -2x$

a.) Make a table of values and a graph

x	$y = -2x$	y
-2	$y = -2(-2)$	4
-1	$y = -2(-1)$	2
0	$y = -2(0)$	0
1	$y = -2(1)$	-2
2	$y = -2(2)$	-4



b.) List three solutions NOT listed in your table.

$(3, -6)$ $(4, -8)$ $(-3, 6)$ * Answers may vary.

c.) Is this a linear relationship?

Yes

d.) Is this a function?

Yes

e.) State the domain and range:

Domain: $\{-2, -1, 0, 1, 2\}$

Range: $\{-4, -2, 0, 2, 4\}$

3.) $y = x^2 - 4$

a.) Make a table of values and a graph

x	$y = x^2 - 4$	y
-2	$(-2)^2 - 4$	0
-1	$(-1)^2 - 4$	-3
0	$(0)^2 - 4$	-4
1	$(1)^2 - 4$	-3
2	$(2)^2 - 4$	0

b.) Is this a linear relationship?

NO

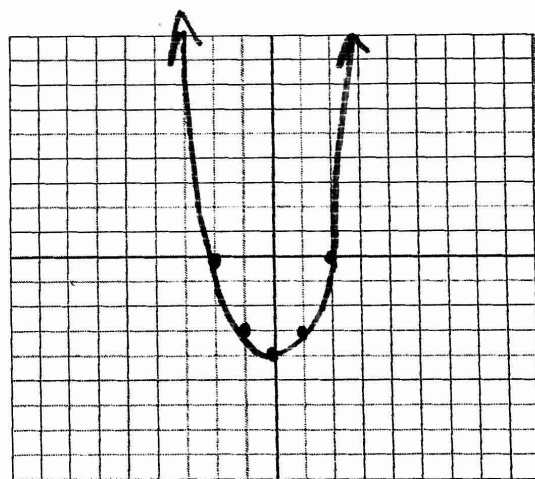
c.) Is this a function?

Yes

d.) State the domain and range:

Domain: $\{-2, -1, 0, 1, 2\}$

Range: $\{-4, -3, 0\}$



* parabola "U" shape
* extend w/ arrows

$-2 \cdot -2 = 4$