Test Review : Functions

Relations & Functions

Given the relation : $\{(-6,-3), (-2,-1), (0,3), (1,2)\}$

① State the Domain

② State the Range

③ express the relation as a Domain/Range table

For each relation below:

a) construct a Domain/Range table

b) use the table to determine if the relation is a function

④ $\{(1,3), (0,4), (2,6), (1,5)\}$

⑤ $\{(2,0), (1,1), (3,0), (4,5\}$

Evaluating Functions. Let $f(x) = x^2 - 3x$.

⑥ $f(1) =$ ⑦ $f(3) =$

⑧ $f(-2) =$ ⑨ $f(0) =$

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Linear Functions

You earn $8.00 per hour babysitting.

(10) Write a linear function to represent the total amount of money you earned (y) after working (x) hours.

(11) Construct a function table for the total amount of money earned after working 1, 2 & 3 hours

(12) is the linear function discrete or continuous?

Properties of Functions

Car Rental Company A charges people based on the following equation: $C = 10h + 20$ where C is the cost to rent a car after h hours.

Company B's cost to rent a car is shown here:

hours car is rented	1	2	3	4
cost to rent	38	46	54	62

(13) Compare the functions by comparing their y-intercepts & rates of change.

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Construct Functions

As a music fan, you plan on collecting 8 records per month. After 6 months of collecting, you have 58 records.

(14) Assume the relationship is linear. Find & interpret the rate of change (m) & the initial value (y-intercept).

The table below shows the hourly cost to rent a bike at the beach:

# of hours (x)	cost $ (y)
3	19
4	22
5	25

(15) Assume the relationship is linear. Find & interpret the rate of change (m) & the initial value (y-intercept).

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Answers:

① $\{-6, -2, 0, 1\}$

② $\{-3, -1, 3, 2\}$

③

D		R
-6	→	-3
-2	→	-1
0	→	3
1	→	2

④

D		R
1	→	3
0	→	4
2	→	6
		5

not a function

⑤

D		R
2	→	0
1	→	1
3	→	0
4	→	5

It is a function

⑥ $f(1) = -2$

⑦ $f(3) = 0$

⑧ $f(-2) = 10$

⑨ $f(0) = 0$

⑩ $y = 8x$

⑪

hours worked	$ earned
1	8
2	16
3	24

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Answers:

(12) the linear function is continuous since it is possible to work any part of an hour.
for example: you could work 2.75 hours.

(13) Company A has an initial rental fee (y-int) of $20
Company B has an initial rental fee (y-int) of $30
Company A has a rate of change (m) of $10 per hour
company B has a rate of change (m) of $8 per hour
So... Company A has a lower initial rental fee while the charge per hour (rate of change) is lower for Company B.

(14) rate of change (m) = 8 records per month
initial value (y-int.) = 10 records
* this means you have 10 records before you start collecting 8 records per month

(15) rate of change (m) = $3 per hour
initial value (y-int) = $10
* this means you have to pay $10 before you can start renting the bike at $3 per hour.