Exercises #1

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Exercise 0.1

a. Set of all odd values in the set $\mathbb{N}$

b. Set of all even values in the set $\mathbb{Z}$

c. Set of all even values in the set $\mathbb{N}$

d. Set of all even values that are multiples of 6 in the set of $\mathbb{N}$

e. Set of any string combos of 1's and 0's and the reverse of that string.

f. Empty Set.

Exercise 0.2

a. $\{1, 10, 100\}$

b. $\{n | n > 5, n \in \mathbb{Z}\}$

c. $\{n | n < 5, n \in \mathbb{N}\}$

d. $\{\text{aba}\}$

e. $\{\epsilon\}$

f. $\{\}$

Exercise 0.3

a. No

b. Yes

c. $\{x, y, z\}$

d. $\{y, x\}$

e. $\{(x, x), (x, y), (x, z), (y, x), (y, y), (y, z)\}$

f. $\{\varnothing, \{x\}, \{y\}, \{x, y\}\}$

Exercise 0.4

$a * b$ because the cross multiplication of two sets will return a set with a size that is the same as the multiple of the two sets.

Exercise 0.5

2^c definition of the Power Set.

Exercise 0.6

a. $f(2) = 7$

b. Range of $f : \{6, 7\}$
Domain of $f : \{1, 2, 3, 4, 5\}$

c. 6

d. Domain of $g : \{(1,6), (1,7), (1,8), (1,9), (1,10), (2,6), (2,7), (2,8), (2,9), (2,10), (3,6), (3,7), (3,8), (3,9), (3,10), (4,6), (4,7), (4,8), (4,9), (4,10), (5,6), (5,7), (5,8), (5,9), (5,10)\}$
Range of $g : \{6, 7, 8, 9, 10\}$

e. 8

Exercise 0.7

a. $\{(a,a), (a,b), (b,a), (b,b), (c,c), (b,c), (c,b)\}$

b. $\{(a,a), (a,b), (b,b), (c,c)\}$

c. $\{\}$