

**DM HOMEWORK 8** (8 марта 2016 г.)*Tropin Andrew**e-mail: [andrewtropin@gmail.com](mailto:andrewtropin@gmail.com)**github: [abcdw](#)***Problem 1.** $g(A) = \{a\}, g(X) = \{a, d\}.$ 

Inverse function doesn't exist. But maybe you want something like this:  $g^{-1}(C) = \{1, 2, 3\}, g^{-1}(D) = \emptyset, g^{-1}(Y) = X$

**Problem 2.**

- a. true
- b. false, because inverse function may not exist.

**Problem 4.**

- a. They are one to one, same result can't be reached with different parameters, because of primes.
- b. They are not onto. 2 can't be reached.

**Problem 5.**

Because of fulfillment of two properties these functions are both bijections. Bijections always have inverse function. If functions are bijections then composition is a bijection too. As we said above, bijections always have inverse function. But actually  $f(g(x))$  doesn't exist because of incompatible domains.

**Problem 8.**

```
#!/usr/bin/python3
```

```
def func(n, m):  
    count = 0  
    prod = 1  
    for i in range(1, n + 1):  
        prod = i  
        dv = divmod(prod, m)  
        while dv[1] == 0:  
            count += 1  
            prod = dv[0]  
            dv = divmod(prod, m)  
  
    return count
```

```
n = 24
```

```
m = 2
```

```
print(func(n, m))
```