

# MODULAR-EXPONENTIATION( $a, b, n$ )

```
1  if  $b == 0$ 
2      return 1
3  elseif  $b \bmod 2 == 0$ 
4       $d = \text{MODULAR-EXPONENTIATION}(a, b/2, n)$     // b is even
5      return  $(d \cdot d) \bmod n$ 
6  else  $d = \text{MODULAR-EXPONENTIATION}(a, b - 1, n)$  // b is odd
7      return  $(a \cdot d) \bmod n$ 
```