Homework 1 Answers

Answers

1. What is
   a) 4 + 4 *= 1 mod 7*
   b) 3 × 5 *= 1 mod 7*
   c) what is the inverse of 3 ?
   Using $a^{-1} \equiv a^{p-2} (mod\, p)$
   = 3 ^ (7-2) = 3 ^ 5 = 243
   = 5 mod 7

2. For S = {0,1,2,3,4,5,6}
   Can we consider 'S' and the operation '+' a group ?

   - *yes it follows all of the group properties*

3. -13 mod 5
   = 2 mod 5.
4. *x = 2 is a root*
   degree is 3