

Fall 2018, Math 320: Week 3 Preliminary Problems
Due: Thursday, September 13th, 2018
Modular Arithmetic

Preliminary problems. These problems should be completed before discussion on Thursday.

(P1) Fill in the addition and multiplication tables for \mathbb{Z}_6 below. You may omit the $[\]_6$ notation if you prefer.

+	$[0]_6$	$[1]_6$	$[2]_6$	$[3]_6$	$[4]_6$	$[5]_6$
$[0]_6$	0					
$[1]_6$						
$[2]_6$				5		
$[3]_6$						
$[4]_6$						
$[5]_6$						

·	$[0]_6$	$[1]_6$	$[2]_6$	$[3]_6$	$[4]_6$	$[5]_6$
$[0]_6$			0			
$[1]_6$						
$[2]_6$						
$[3]_6$						
$[4]_6$						
$[5]_6$						1

(P2) Find all $x \in \mathbb{Z}_7$ that satisfy $x^2 = [4]_7$.