

**Fall 2022, Math 522: Preliminary Problem Set 9**  
**Due: Wednesday, October 26th, 2022**  
**Primitive Roots**

**Preliminary problems.** These problems should be completed before discussion.

- (P1) Find the additive order of each integer  $a$  modulo 15, as well as their multiplicative orders (where applicable). Identify which elements are primitive roots.

$a$	add. order	mult. order
0		
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		