

MATH 42-NUMBER THEORY
 PROBLEM OF THE DAY #7
 DUE THURSDAY, FEBRUARY 24, 2011

1. Complete the following tables of powers in U_7 and U_{15} . What is $\varphi(7)$ and $\varphi(15)$? Do you notice any patterns?

	1	2	3	4	5	6
a^1	1	2	3	4	5	6
a^2	1	4				
a^3	1	1				
a^4	1	2				
a^5	1	4				
a^6	1	1				

	1	2	4	7	8	11	13	14
a^1	1	2	4	7	8	11	13	14
a^2	1							
a^3	1							
a^4	1							
a^5	1							
a^6	1							
a^7	1							
a^8	1							