

Homework 16

Use the results of Homeworks 12–14 to prove our formula

$$\varphi(p_1^{e_1} p_2^{e_2} \cdots p_k^{e_k}) = p_1^{e_1-1} (p_1 - 1) p_2^{e_2-1} (p_2 - 1) \cdots p_k^{e_k-1} (p_k - 1)$$

(Hint: $GL_1(\mathbf{Z}_n)$ is basically \mathbf{Z}_n^*)