

Quantitative Reasoning 28: The Magic of Numbers

Homework 22

Assigned on April 8

Due at 5:00 p.m. April 11

Please submit problem sets to the boxes outside the Math Department's main office, on the third floor of the Science Center (Room 325).

Reading:

Gross-Harris, Chapters 13 and 20

Problems:

Please explain your reasoning and show your work.

- Compute $\phi(29)$. (Here $\phi(n)$ is Euler's phi function, as discussed in lecture.)
 - $\phi(77)$.
 - $\phi(8)$.
- Compute $12^{361} \pmod{77}$.
 - Compute $3^{402} \pmod{8}$.