

Homework 3
2022-2023 3rd Trimester
Due on Wednesday June 7, 2023, 11:59 p.m. via Blackboard.

If you do not have the textbook, use the following link to download it

Do textbook problems:

- Problem 8.4 (Page 263)
- Problem 8.11 (Page 264)
- Problem 8.18 (Page 265)
- Determine the following:
 - $\phi(49)$
 - $\phi(144)$
- How many primitive roots Modulo 11? Show your answer step by step.
- If you know that 3 is a primitive root modulo 17, find the other primitive roots modulo 17.
- Use Rabin–Miller primality test to show that 137 is prime?
- **(Graduate Students ONLY) answer the following 2 questions:**
 - Use Fermat's primality test to show that 7 is prime?
 - Use AKS primality test to show that 5 is prime?

- Problem 9.2 (a and c only) (Page 292)
- **(Optional)** Problem 9.3 (Page 293)