Bucknell
U N I V E R S I T Y

Sample Handout

Term: Summer 2019

HONOR CODE STATEMENT

In completing this assignment, I upheld the Bucknell honor code.

Signature: _____

Course ID:	**ECE 999**
Course Title:	Engineering Programming I
Instructor:	Stewart J. Thomas
Date:	May 12, 2019
Exam Duration:	10 minutes
Number of pages:	4 (including this sheet)

Start time: 12:00 pm
End time: 12:01 pm

Additional Instructions:

You may leave 2 question(s) blank with no penalty.

My goal wasn't to make a ton of money. It was to build good computers. I only started the company when I realized I could be an engineer forever.
— Steve Wozniak

Summary of Authorized Aid:

	No	Yes
1-page of Note Paper ("cheat sheet")	❏ No	✔ Yes
Calculator	✔ No	❏ Yes
Printouts & notes	✔ No	❏ Yes
Access online materials	✔ No	❏ Yes

Unauthorized Aid:

You may **NOT** consult with any other person besides the professor while completing this exam, nor may you consult any other person's course materials.

Reminder:

Please fill in your answers completely.

GOOD!	BAD!
▨	⊠

For free-response questions, do not write in the grayed-out areas. Example: ❏w ❏p ❏c

Please enter your student ID to the left and **PRINT** your first and last name below.

Firstname and lastname:

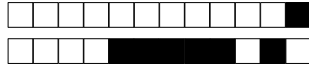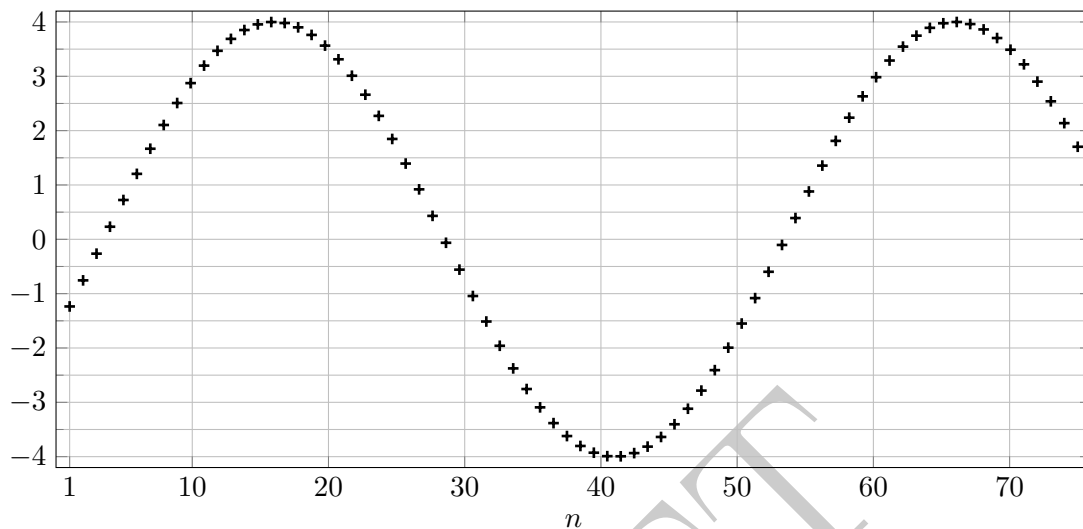..

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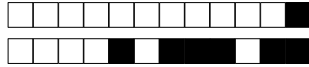
DRAFT

1 (4 points) Convert the 8-bit, twos complement binary number **1111 1111**$_2$ from binary to decimal.

☐ -1

☐ 61

☐ -38

☐ -30

☐ 163

The following graph contains samples of a signal. The sampling rate was **1000 Hz**.

Give an expression for $y(t)$ that represents the original continuous-time signal including **amplitude** [2 points], **frequency (Hz)** [4 points], and **phase** [4 points].

☐ w ☐ p ☐ c

☐ w ☐ p ☐ c

☐ w ☐ p ☐ c

5 (4 points) Write an equation for a *recursive* digital system. ☐w ☐p ☐c

6 (3 points) For the equation you wrote in question 5, draw the system using signal flow graphs. ☐w ☐p ☐c