# Question 1.

# Version 1 – Using variables.

# Assign User data to meaningful variables

username1 = “matt”

phone1 = “1234”

email1 = “ma77@code.org”

username2 = “joe”

phone2 = “9823”

email2 = “mjoe@python.com”

username3 = “lee”

phone3 = “3463”

email3 = “lee81@gmail.com”

# Print table heading

print(“{0:<10}{1:>10} {2:<25}”.format(“Username”, “Phone”, “Email"))

# Print table data

print(“{0:<10}{1:>10} {2:<25}”.format(username1, phone1, email1))

print(“{0:<10}{1:>10} {2:<25}”.format(username2, phone2, email2))

print(“{0:<10}{1:>10} {2:<25}”.format(username3, phone3, email3))

# Q1 - Version 2. – Using lists.

# Assign User data to lists with meaningful names

user\_names = [“matt”, “joe”, “lee”]

phone\_numbers = [1234, 9823, 3463]

email\_addresses = [“ma77@code.org”, “mjoe@python.com”, “lee81@gmail.com”]

users\_total = len(user\_names)

# Print table heading

print(“{0:<10}{1:>10}{2:10}{3:<25}”.format(“Username”, “Phone”, “”, “Email”))

# Print table information

for data in range(0, users\_total):

print(“{0:<10}{1:>10}{2:10}{3:<25}”. \

format(user\_names[data], str(phone\_numbers[data]), “”, email\_addresses[data]))

# End of Question 2.

#Question 2.

# Version 1

# Ask user to enter two integers

user\_input = input(“Enter the first integer: “)

number1 = int(user\_input)

user\_input = input(“Enter the second integer: “)

number2 = int(user\_input)

# Calculate sum and product

user\_sum = number1 + number 2

user\_product = number1 \* number2

# Display sum (using string addition)

print(“The sum of “ + number1 + “ and “ + number2 + “ is “ + user\_sum + “.”)

# Display product (using string format)

print(“The product of {0} and {1} is{2}.”.format(number1, number2, user\_product))

PTO

# Q2 - Version 2

# Define functions

# Define 1 – Sum of any two numbers

def sum\_two\_num(num1, num2):

summation = num1 + num2

return summation

# End of function “sum\_two\_num”

# Define 2 – Product of any two numbers

def prod\_two\_num(num1, num2):

product = num1 \* num2  
 return product

# End of function “prod\_two\_num”

# Define 3 – Ask user for inputs. Make calculations

Def user\_info\_calc():

first\_num\_input = input(“Enter the first integer: “)

first\_num = int(first\_num\_input) # <-- Convert input to integer

second\_num\_input = input(“Enter the second integer: “)

second\_num – int(second\_num\_input=) # <-- Convert input to integer

# Call sum function, give it user inputs

user\_sum = sum\_two\_ num(first\_num, second\_num)

# Call product function, give it user inputs

user\_prod = prod\_two\_num(first\_num, second\_num)

return first\_num, second\_num, user\_sum, user\_prod

# End of function “user\_info\_calc”

# Define 4 – Print summary to user

def print\_info(first\_num, second\_num, user\_sum, user\_prod):

# Print sum using string addition

print(“The sum of “ + first\_num + “ and “ + second\_num \

“ is “ + user\_sum + “.”)

# Print product using string format

print(“The product of {0} and {1} is {2}.”.format(first\_num, second\_num, user\_prod))

# End of function”print\_info”

# Main program:

# Get information

first\_num, second\_num, user\_sum, user\_prod = user\_info\_calc()

# Print to user

print\_info(first\_num, second\_num, user\_sum, user\_prod)

# End of Question 2

#Question 3

# Ask User input

student\_yn = input(“Are you a student? (Y/N): “)

journal1\_yn = input(“Subscribe to Journal of Algebra? (Y/N): “)

journal2\_yn = input(“Subscribe to Journal of Geometry? (Y/N): “)

journal3\_yn = input(“Subscribe to Journal of Number Theory? (Y/N): “)

cost = 0

if (student\_yn == “Y”):

# YES, is student

if (journal1\_yn == “Y”):

cost = cost + 30

if (journal2\_yn == “Y”):

cost = cost + 35

if (journal3\_yn == “Y”):

cost = cost + 40

else:

# NO, is not a student

if (journal1\_yn == “Y”):

cost = cost + 50

if (journal2\_yn == “Y”):

cost = cost + 60

if (journal3\_yn == “Y”):

cost = cost + 70

# Display the cost

print(“The total cost is: ${0}”.format(cost))

PTO

# Q3 – Version 2

cost = 0 # <-- Define a cumulative cost variable

# User’s Student status

student\_input = input(“Are you a student? (Y/N): “)

student = student\_input.upper(). # <-- Make input uppercase

# YES, is a student

if (student == “Y”):

algebra\_price = 30

geometry\_price = 35

number\_theory\_price = 40

# NO, is not a student

else:

algebra\_price = 50

geometry\_price = 60

number\_theory\_price = 70

# Journal of Algebra

algebra\_subscription\_input = input(“Subscribe to Journal of Algebra? (Y/N): “)

algebra\_subscription = algebra\_subscription\_input.upper()

# YES, subscribe to journal 1

if (algebra\_subscription == “Y”):

cost = cost + algebra\_price

# Journal of Geometry

geometry\_subscription\_input = input(“Subscribe to Journal of Geometry? (Y/N): “)

geometry\_subscription = geometry\_subscription\_input.upper()

# YES, subscribe to journal 2

if (geometry \_subscription == “Y”):

cost = cost + geometry\_price

# Journal of Number Theory

number\_theory\_subscription\_input = input(“Subscribe to Journal of Number Theory? (Y/N): “)

number\_theory\_subscription = number\_theory\_subscription\_input.upper()

# YES, subscribe to journal 3

if (algebra\_subscription == “Y”):

cost = cost + number\_theory\_price

# Calculate total cost of all the selected subscriptions

total\_cost = algebra\_cost + geometry\_cost + number\_theory\_cost

# Print total cost to User

Print(“The total cost is ${0}”.format(total\_cost))

# End of Question 3

# Question 4

# Ask User to choose a number

times\_table\_input = input(“Enter an integer: “)

# Convert user’s input to an integer

times\_table = int(times\_table\_input)

# Print to user which times table they chose

print(“Times table by {0}: “.format(times\_table))

# For each multiple, calculate the product, and print in specified format

for multiple in range(1, 11):

print(“{0} x {1} = {2}”.format(times\_table, multiple, times\_table \* multiple))

# End of Question 4

# Question 5

# Version 1

# Initialise the sum as 0

sum\_of\_num = 0

# Run forever or until user exits

while True:

user\_input = input(“Enter an integer or q to quit: “)

if (user\_input == “q”):

break

number = int(user\_input)

# Add the number to the sum

sum\_of\_num = sum\_of\_num + number

# Display the sum

print(“The sum is {0}”.format(sum\_of\_num))

PTO

# Q5 – Version 2

# Define an empty list (to store future user chosen integers)

integer\_list = []

# Begin while loop, to run forever or until user chooses to exit

while True:

# Ask user to enter a number or exit program

user\_input\_raw = input(“Enter an integer or q to quit: “)

user\_input = user\_input\_raw.lower() # <-- Convert input to lowercase

# User chooses to exit

if (user\_input == “q”):

# End loop

Break

# User chooses to continue. Convert input to an integer

else:

user\_integer = int(user\_input)

# Add integer to previously defined list

integer\_list.append(user\_integer)

# Run loop again

# Once user chooses to exit loop, sum all of the stored values

integer\_sum = sum(integer\_list)

# Print summation statement for user

print(“The sum is {0}”.format(integer\_sum))

# End of Question 5

# Question 7

# Define an empty list (to store future randomly generated digits)

code = []

# Run four times (to generate 4 digits)

for digit in range(0, 4):

import random

# Assign a random integer between 0-9 to variable

random\_digit = random.randint(0, 9)

# Add this integer to previously defined list

code.append(random\_digit)

# Loop runs again until range achieved

# Print generated “code”, referencing each digit stored in list

print(“{0}-{1}-{2}-{3}”.format(code[0], code[1], code[2], code[3]))

# End of Question 7