ENGG1340 Computer Programming II

Module 3 Checkpoint Exercise

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Instructions:

For checkpoint 3.1 – 3.5, please type your answer right after the question in this Word document and submit the file on Moodle. For checkpoint 3.6 – 3.9, please complete them on the corresponding activities on Moodle.

**Checkpoint 3.1**

What is the screen output when each of the following C++ statements is performed? Assume x = 4 and y = 6. You should write “no screen output” if no output is displayed for the statement.

1. cout << y; Ans: 6
2. cout << x - y; Ans: -2
3. cout << "y"; Ans: y
4. cout << "x = " << x; Ans: x = 4
5. cout << x \* y << " = " << y \* x; Ans: 24 = 24
6. p = x - y Ans: no screen output
7. // cout << "x - y = " << x - y; Ans: no screen output

**Checkpoint 3.2**

Given the algebraic equation , which of the following are correct statements for this equation?

1. y = a \* x \* x \* x -12;
2. y = a \* x \* (x - 12);
3. y = a \* (x \* x) \* (x -12);
4. y = a \* x \* (x \* x) - 12;
5. y = a \* ( x \* x \* x ) -12;

Ans: (a), (d), (e) are correct for this question

**Checkpoint 3.3**

What is the value of x after each statement is performed?

1. x = 6 + 3 \* 7 / 1 - 2; Ans: 25
2. x = 3 % 3 + 3 \* 2 - 2 / 2; Ans: 5

**Checkpoint 3.4**

If x = 5, y = 6, z = 7, evaluate each of the following statements, if possible. If it is not possible, state the reason.

1. (x + z) % y Ans: 0
2. (x % y) % z Ans: 5
3. (x \* z) % y Ans: 5

**Checkpoint 3.5**

What is printed by the following program? Suppose the input is: 20 25

#include <iostream>

const int NUM = 10;

const double X = 20.5;

int main()

{

int a, b;

double p;

char grade;

a = 23;

cout << "a = " << a << endl;

cout << "Enter two integers: ";

cin >> a >> b;

cout << endl;

cout << "The numbers you entered are "

<< a << " and " << b << endl;

p = X + 2 \* a - b;

cout << "p = " << p << endl;

grade = 'B';

cout << "Your grade is " << grade << endl;

a = 2 \* NUM + p;

cout << "The value of a = " << a << endl;

return 0;

}

Ans:

a = 23

Enter two integers: 20 25

The numbers you entered are 20 and 25

p = 35.5

Your grade is B

The value of a = 55

The following is printed out on the screen in sequential order:

- The current value of a (which is 23 followed by a newline)

- The statement “Enter two integers”

- A new line after you input the two numbers

- The numbers you input as a and b with the statement “The numbers you entered are 20 and 25” followed by a newline

-The value of p as calculated according to the formula p = 35.5 (and a newline)

-The statement “Your grade is B” (and a newline)

-The updated value of a according to the formula a = 55

**Checkpoint 3.6 - 3.9**

Refer to corresponding Moodle activities for details.