**VALLEY VIEW UNIVERSITY**

**DEPARTMENT OF COMPUTIN SCIENCES & ENGINEERING**

**COCS113 ELEMENTS OF PROGRAMMING**

**INSTRUCTIONS: Answer all questions and submit your answers in class next week.**

1. Write an algorithm to print a set of 10 integers in ascending order.
2. Write an algorithm to count and report the number of evens in a set of 20 numbers.
3. Write the algorithm to determine the smallest number in a set of 10 numbers.
4. Write an algorithm to generate and display a table of n and n2, for the integer values of n ranging from 1 to 10. a
5. Write an algorithm that show how to evaluate the following expression, given that A = 1 and B = 3. Your answer should be either be true or false. (A + 5) ^ 2 − (B + 4 \* A) <= A^4 + B \* B.
6. Write an algorithm that accept the input Age, displays "Yes, you can vote" if Age is 18 or older and displays "You are too young to vote" if Age is less than 18.
7. Write an algorithm to demonstrate how to evaluate the expression ½(4x +3) – 1/3(5x -8)=36
8. Write an algorithm for a program that calculates and displays a person’s body mass index (BMI). The BMI is often used to determine whether a person with a sedentary lifestyle is overweight or underweight for his or her height. A person’s BMI is calculated with the following formula:

*BMI* = *weight* × *703 / height2* Where *weight* is measured in pounds and *height* is measured in inches. The program should display a message indicating whether the person has optimal weight, is underweight, or is overweight. A sedentary person s weight is considered to be optimal if his or her BMI is between 18.5 and 25. If the BMI is less than 18.5, the person is considered to be underweight. If the BMI value is greater than 25, the person is considered to be overweight.

1. Write an algorithm for a program that determines all prime numbers between 1 and 20.
2. A certain bank charges, $10 per month plus the following check fees for a commercial checking account:

$.10 each for fewer than 20 checks

$.08 each for 20 -39 checks

$.06 each for 40 -59 checks

$.04 each for 60 or more checks

Write an algorithm for a program that asks for the beginning balance and the number of checks written. Compute and display the bank’s service fees for the month.