1. (5 points) Write C++ assignment statements that correspond to the following design statements.

(a) Compute volume = length \cdot width \cdot height
(b) Compute mpg = miles \div gallons
(c) Increment count
(d) Increment yCoord by deltaY
(e) Multiply x by 5

2. (5 points) Suppose that x is assigned the value of 12 and y is assigned the value of 10. What are the results (values) of the following expressions:

(a) y + 3.0 \div 5.0
(b) y + 3 \div 5
(c) 7 \mod (5 \mod 3)
(d) x < 12
(e) y \geq 10

3. (3 points) Consider the following code fragment:

```cpp
while (x > 0)
{
    cout << x << endl;
    x = x - 3;
}
```

What is the output produced if

(a) x is initialized to 2 before the loop
(b) x is initialized to 10 before the loop
(c) x is initialized to -42 before the loop
4. (3 points) Consider the following code fragment:

    do
    {
        cout << x << endl;
        x = x - 3;
    } while (x > 0);

What is the output produced if

(a) \(x\) is initialized to 2 before the loop
(b) \(x\) is initialized to 10 before the loop
(c) \(x\) is initialized to -42 before the loop

5. (9 points) Write (only) an analysis and design using the format shown in class and in the on-line handout *An Analysis and Design Style Guideline* for the problem statement in Programming Project 12 on page 107 of the textbook.