Sample Exam Week 01

CSE 232 (Introduction to Programming II)

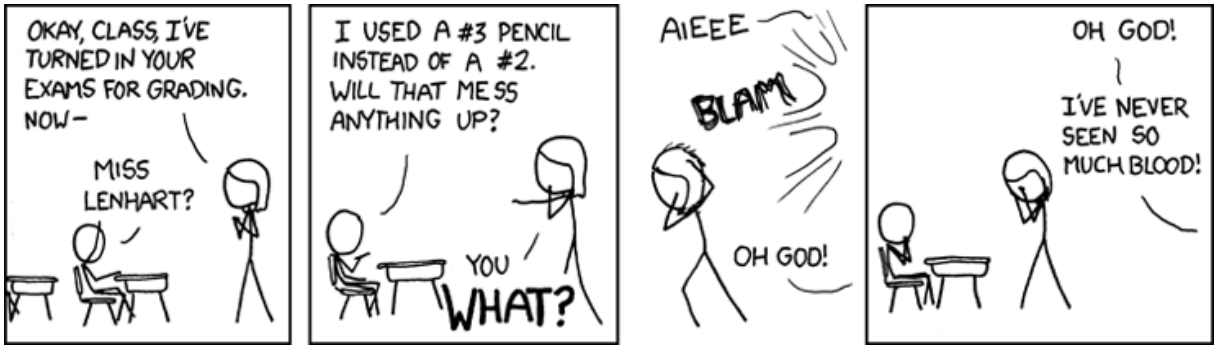
VERSION A

Full Name: .....

Student Number: .....

Instructions:

- DO NOT START/OPEN THE EXAM UNTIL TOLD TO DO SO.
- You may however write and bubble in your name, student number and exam **VERSION/FORM NUMBER** (with a #2 pencil) on the front of the printed exam and bubble sheet prior to the exam start. This exam is Version A. Your section doesn't matter and can be ignored.
- Present your MSU ID (or other photo ID) when returning your bubble sheet and printed exam.
- Only choose one option for each question. Please mark the choosen option in both this printed exam and the bubble sheet.
- Assume any needed `#include`s and `using std::...;` namespace declarations are performed for the code samples.
- Every question is worth the same amount of points. There are 55 questions, but you only need 50 questions correct for a perfect score.
- No electronics are allowed to be used or worn during the exam. This means smart-watches, phones and headphones need to be placed away in your bag.
- The exam is open note, meaning that any paper material (notes, slides, prior exams, assignments, books, etc.) are all allowed. Please place all such material on your desk prior to the start of the exam, (so you won't need to rummage in your bag during the exam).
- If you have any questions during the exam or finish the exam early, please raise your hand and a proctor will attend you.



http://xkcd.com/499/

1. When should you use a postfix increment instead of a prefix increment?

   (a) When incrementing a value will result in side effects beyond the expression itself
   (b) When the compiler warns of ambiguous or undefined behavior
   (c) When you need the value returned by the expression to be the pre-increment value
   (d) When the type of the value being incremented is an integer or character, or if the value should be interpreted as such
   (e) When clarity is more important than performance

2. Which of the following is a bitwise operator?

   (a) `operator||`
   (b) `operator*`
   (c) `operator=`
   (d) `operator++`
   (e) `operator&`

3. Which of the following operations can you do with a constant variable?

   (a) Initialize It
   (b) Assign To It
   (c) Print It
   (d) Change It
   (e) You can do two of the above
   (f) You can do three of the above
   (g) You can do all of the above

4. An identifier that is not declared inside any other construct has what scope?

   (a) total
   (b) undefined
   (c) reserved
   (d) file
   (e) global
   (f) program
   (g) local

5. Which of the following is NOT a benefit to using curly braces for initialization?

   (a) Allows const variables to be initialized
   (b) Can't be confused for a function declaration
   (c) Avoids the "Most Vexing Parse"
   (d) Avoids narrowing conversions

6. Why should undefined behavior be avoided?

   (a) Because it means that your program must be run with only the most modern of compilers
   (b) Because it means that your program can't compile
   (c) Because it means that your program will be difficult to write and even more difficult to read
   (d) Because it means that your program's could do anything
   (e) Because it means that your program can only run on specific hardware

7. Why does C++ allow for programs with undefined behavior?

   (a) Because it allows for compiled programs to run more efficiently
   (b) Because detecting undefined behavior is difficult and/or expensive
   (c) Because it expects that software developers will be able to write code that doesn't produce undefined behavior
   (d) All of the above are true

8. When should `auto` be used in an initialization?

   (a) When writing out the name of the type would be laborious
   (b) When the type of a variable isn't known
   (c) When the compiler indicates that it is necessary
   (d) All of the above are true

9. What is the value of `x`?
   `bool x{0123 == 83};`

   (a) `true`
   (b) `false`
   (c) `bool`
   (d) `83`
   (e) Impossible to determine with the information given

10. If you wanted a type that was an integer of 32 bits in size, which type should you use?

    (a) `unsigned`
    (b) `char`
    (c) `double`
    (d) `int`
    (e) None of the above

11. Which of the following is equivalent to this statement?
    `double const d{other};`

    (a) `double const d = other;`
    (b) `const double d = other;`
    (c) `const double d{other};`
    (d) All of the above are equivalent