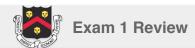
Exam 1 Review

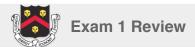
Lecture 5



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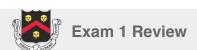
Outline

- 1. Format
- 2. Content
- 3. Review Exercises



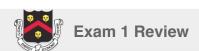
Format

- The exam will be 5-6 problems, with some problems having multiple sub-questions
- You are allowed a single 8.5x11" piece of paper with whatever notes you want on it
 - Can be handwritten or computer printed
 - You may use both the front and back
- No calculators, books, laptops, phones, or anything besides your single page of notes may be used



Kinds of Questions to Expect

- Explain a program or part of a program
- Translate between "normal" math expressions and their C++ equivalents
- Write your own code
- Fix incorrect code / find bugs in code
- Fill in the blank (in a program)
- Short answer

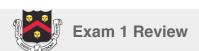


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Content

Essentially, everything we've covered so far in the semester, including:

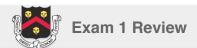
- Basic computer layout and components
- Compilers and linkers
- Variables / data types
- Input and output (cin and cout)
- Mathematical expressions in C++
 - Order of operations, integer division, etc.
- if-else statements



Review Exercises

 The following slides contain exercises that will help you prepare for the exam

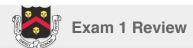
 The exercises give you an idea of the style of questions to expect as well as the complexity



Convert the following mathematical expressions into their C++ equivalents

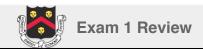
$$\frac{11z}{2(x-3y^2)}$$

$$y + z - 2 \le 3x \le 5yz$$



$$\frac{11z}{2(x-3y^2)}$$
 (11*z) / (2*(x - 3*y*y))

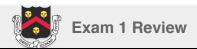
$$y+z-2 \le 3x \le 5yz$$



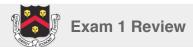
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What is the output of the following program fragment?

```
int some_value = 99/100 + 4 + 5/2;
cout << some_value << endl;</pre>
```

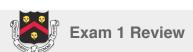


6

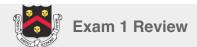


What is the output of the following program fragment?

```
double num = 3.75;
if ( num <= 0 )
    cout << "Less than 0!" << endl;</pre>
else if ( num >= 1 )
    cout << "Greater than 1!" << endl;</pre>
else if ( num == 3.75 )
    cout << "Equal to 3.75!" << endl;</pre>
else
    cout << "Umm... something?" << endl;</pre>
```

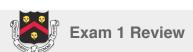


Greater than 1!

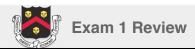


What is the output of the following program fragment?

```
double num = 3.75;
if ( num <= 0 )
    cout << "Less than 0!" << endl;</pre>
if ( num >= 1 )
    cout << "Greater than 1!" << endl;</pre>
if (num == 3.75)
    cout << "Equal to 3.75!" << endl;</pre>
else
    cout << "Umm... something?" << endl;</pre>
```

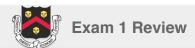


Greater than 1! Equal to 3.75!

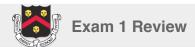


What is the value of x at the end of the program fragment below?

double x = 14 % 11 * 3 / 2;

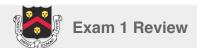


4

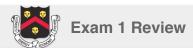


What is the value of x at the end of the program fragment below?

double x = 14.0 / 4 * 3 / 2;



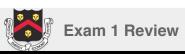
5.25



Fall 2014

Find all errors in the C++ program below.

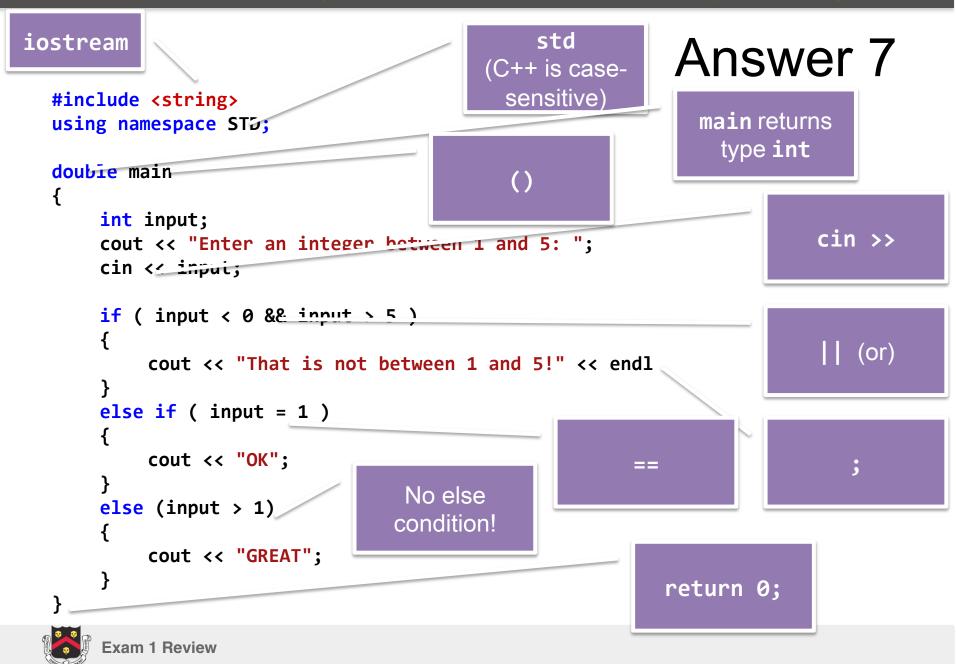
```
#include <string>
using namespace STD;
double main
     int input;
     cout << "Enter an integer between 1 and 5: ";</pre>
     cin << input;</pre>
     if ( input < 0 && input > 5 )
           cout << "That is not between 1 and 5!" << endl</pre>
     else if ( input = 1 )
           cout << "OK";</pre>
     else (input > 1)
           cout << "GREAT";</pre>
}
```



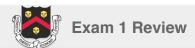
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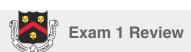
Derbinsky



Write a complete C++ program that reads in three numbers from the user and prints out the maximum (largest) of the three.



```
#include <iostream>
using namespace std;
int main()
{
     double num1, num2, num3;
     double max;
     cout << "Enter three numbers: ";</pre>
     cin >> num1 >> num2 >> num3;
     if ( num1 >= num2 && num1 >= num3 )
          max = num1;
     else if ( num2 >= num3 )
         max = num2;
     else
          max = num3;
     cout << "The max was " << max << endl;</pre>
     return 0;
```



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Wrap Up

- Review the previous slides and labs
- Work through all the examples and exercises
- Check the book if you have it for additional exercises
- Use the page of notes as a study guide to help you prepare for the exam
- Come see me with any questions or if you need some help understanding anything we've covered so far this semester

