1

h02

CS16 W17

Name:	
(as it would appear on official course roster)	

Umail address: @umail.ucsb.edu	**section**

| Optional: name you wish to be called if different from name above. | |

| Optional: name of "homework buddy" (leaving this blank signifies "I worked alone" | |

h02: Chapter 1, section 1.3, Chapter 2, sections 2.1 - 2.2

ready?	assigned	due	points
true	Thu 01/12 03:30PM	Tue 01/17 03:30PM	16

You may collaborate on this homework with AT MOST one person, an optional "homework buddy".

MAY ONLY BE TURNED IN IN THE LECTURE/LAB LISTED ABOVE AS THE DUE DATE,
OR IF APPLICABLE, SUBMITTED ON GRADESCOPE. There is NO MAKEUP for missed assignments;
in place of that, we drop the three lowest scores (if you have zeros, those are the three lowest scores.)

Complete your reading of Chapter 1, section 1.3 pages 27-32, Chapter 2 sections
2.1 thru 2.2, pages 39-59 (If you don't have a copy of the textbook yet, there is one
on reserve at the library under "COMP000-STAFF - Permanent Reserve").

1. (6 pts) The author describes the difference between "syntax errors" and
"logic errors", and also the difference between syntax errors that produce
an "error message" vs. those that produce a "warning message". Briefly
explain each of the items below in a way that makes the DIFFERENCES
among them clear:

Please:

- **No Staples**.
- **No Paperclips**.
- **No folded down corners**.

i. Syntax errors that result in an error message:

Such message implies that there is a syntax violation of this programming language.

ii. Syntax errors that result in an warning message:

Such warning message implies although there is no syntax violation of this programming language, this statement might indicate a likely mistake.

iii. Logic errors:

Mistakes in the underlying algorithm or in the translating the algorithm into C++ programming.

2. (1 pt) If the following statement were in a C++ program, what would it do?

cout >> "I love oranges and apples";

There is an error message: "error: Invalid operands to binary expression ('ostream' (aka 'basic_ostream<char>') and 'const char *')"

3. (1 pt) If the following statement were in a C++ program, what would it do?

cout << "The world goes round and round"

There is an error message: "error: expected ';' after expression"

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4. (4 pts) Show 2 different ways to initialize variables in C++?

    1.Type_Name Variable_Name = Expression_For_Value;
    Eg: int count = 0;
    2.Type_Name Variable_Name = Expression_For_Value;
    Eg: int count(1);

5. (2 pts) Is this variable declaration statement in C++ a good one? Why or why not?

```
double int=30;
```

    Not a good one. Identifiers cannot be keywords (reserved words) like "int".

6. (2 pts) How do you write the following in ONE LINE in C++: Add a to b and subtract that sum from c, then divide that result by d? Assume all variables are of type double.

    double result = (c - (a + b)) / d;

<table>
<tr><td colspan="2">Name:</td><td rowspan="2">section</td></tr>
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1

h03

CS16 W17

h03: Chapter 2, sections 2.3 - 2.5

ready?	assigned	due	points
false	Tue 01/17 03:30PM	Thu 01/19 03:30PM	20

You may collaborate on this homework with AT MOST one person, an optional "homework buddy".

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OR IF APPLICABLE, SUBMITTED ON GRADESCOPE. There is NO MAKEUP for missed assignments;
in place of that, we drop the three lowest scores (if you have zeros, those are the three lowest scores.)

Read Chapter 2, sections 2.3 - 2.5 (If you don't have a copy of the textbook yet,
there is one on reserve at the library under "COMP000-STAFF - Permanent
Reserve").

**PLEASE WRITE ALL YOUR ANSWERS IN THIS SHEET. HOMEWORKS
SUBMITTED IN A FORMAT DIFFERENT FROM THE PROVIDED
TEMPLATE WILL RECEIVE 0 POINTS. PLEASE MARK YOUR
HOMEWORK CLEARLY, REGARDLESS OF IF YOU WRITE IT OUT IN
INK OR PENCIL!**

Please:

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- **No folded down corners**.

1. (4 pts) Explain via and example what a "type mismatch" is? How do
compilers handle C++ statements that have a type mismatch?

Eg: int int_variable = 2.99
Type mismatch is to store a value of one type in a variable of another type.
Some compilers will issue an error message, some will give only a warning message, and some
will not object at all.

2. (4 pts) What does the keyword 'auto' do for the programmer in the C++11 declaration:

```
auto x = 2.73;
```

Auto will deduce the type of a variable based on an expression on the right side of the equal sign.

3. (4 pts) Write an if-else statement that outputs the string "Grade is B" if the variable `score` is between 80 and 90 (both limits included).
Otherwise the if-else statement should output "Grade is not B" ?

```
if (score >= 80 && score <= 90){
        cout << "Grade is B" << endl;    // "<< endl" is optional
}
else{
        cout << "Grade is not B" << endl;
}
```

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h03

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4. (4 pts) The program below intends to do the following: Repeatedly prompt the user to input an integer number. When the user no longer wants to continue entering numbers, output the sum of all the positive numbers entered by the user followed by the sum of all the negative numbers entered by the user. However, this program has bugs. Mark all logical and syntax errors in the program and provide corrections in the space to the right. Add missing statements if any.

```cpp
#include <iostream>
using namesapece std;
int main(){

    int a , sumPositive, sumNegative;

    string promptContinue ="\nTo continue enter Y/y\n", promptNum = "\nEnter a number: "

    char response;                          char response = 'Y';

    while (response = 'y'||`Y') {           while (response == 'y' || response == 'Y')

        cout << promptNum;

        cin >> a;

        if(a)
            sumPositive+=a;

        else
            sumNegative+=a;

        cout<< promptContinue;

        cin >> response;

    }

    cout<< "Sum of all the positive numbers is: "<< sumPositive<<endl;

    cout<< "Sum of all the negative numbers is: "<< sumNegative<<endl;

    return 0;
}
```

5. (4 pts) What is the resulting output of the following C++ statements? EXPLAIN WHY.

```cpp
int x=20, y=5;

bool v, w;

v = (x != y);

w = ((x/=y) == 4);

cout << x << " " <<y << " "<< v << " "<< w << endl;
```

4 5 TRUE TRUE