

Instructions: This homework assignment focuses primarily on some of the basic syntax and semantics of C++. The answers to the following questions can be determined from Chapters 3 and 4 of the lecture notes and Chapters 2 through 4 of the text.

Opscan forms will be passed out in class this week. Write your name and code your ID number on the opscan form. Mark Group 1 if you are in the 8TTh section and Group 2 if you are in the 10MWF section. Turn in your completed opscan at class on the 11th or 12th, or to the 1044 GTAs in McB 116/118 by 3:00 on Friday the 12th. No late opscons will be accepted.

For questions 1 through 3, select the value of the given C++ arithmetic expression. Note that the presence of a decimal point indicates a float or double, rather than an int.

	A	B	C	D	E
1) $12.0 / 5.0 + 2 / 5$	2.0	2.4	2.8	5.0	none of the above
2) $10 / 3 * 5$	0	.67	1	15	none of the above
3) $10 \% 5 + 2 \% 5$	0	1	2	3	none of the above

For questions 4 through 6, select the value assigned to the relevant variable, given the declarations:

```
int    anInt;
double aDble;
```

	A	B	C	D	E
4) <code>aDble = 15 / 1.2;</code>	10	10.0	10.25	10.33	none of the above
5) <code>aDble = 5 / 2;</code>	0.4	2.0	2.5	3.0	none of the above
6) <code>anInt = 7.0 / 4.0;</code>	1	1.0	1.75	2	none of the above

For questions 7 through 10, assume the variable declarations:

```
int    fred, murray, zach;
float jane, lisa;
```

Consider each group of statements and mark:

- A) if every statement in the group is syntactically correct
- B) if there is at least one statement in the group that is syntactically incorrect
- C) if there is not enough information to decide

(Assume that any necessary `#include` directives are present.)

- | | |
|--|--|
| <p>7) <code>murray = 17;</code>
 <code>zach = 6;</code>
 <code>fred = murray * zach;</code></p> <p>8) <code>lisa = 403.35;</code>
 <code>jane = lisa^2;</code></p> | <p>9) <code>murray = 17;</code>
 <code>zach = murray++;</code>
 <code>lisa = murray / zach;</code>
 <code>zach += zach;</code></p> <p>10) <code>cout >> "fred" >> endl;</code></p> |
|--|--|

For questions 11 through 14, assume the following variables have been declared

```
int    anInt;
double aDble;
char   aChar;
```

and assume the standard input stream cin contains the values: 1.2 4.5 A -46.32

Determine the value of the indicated variable after the execution of the given statement; each question is independent, that is, each starts with the stream contents shown above.

	A	B	C	D	E
11) aChar after cin >> anInt >> aChar;	4	'4'	' ' (a space)	'.'	none of the above
12) aChar after cin >> aDble >> aChar;	4	'4'	' ' (a space)	'.'	none of the above
13) anInt after cin >> aDble >> anInt;	2	4	5	4.5	none of the above
14) anInt after cin >> anInt; cin.get(aChar); cin >> anInt;	1	2	4	5	none of the above

15) What is printed by the statement: cout << "The answer is" << setw(3) << 30 + 12;

- A) The answer is 30 + 12 B) The answer is 42 C) The answer is 42
D) The answer is 30 + 12 E) none of the above

16) Assuming that all variables are of type double, the correct C++ expression for $\frac{(a+b)c}{d+e}$ is:

- A) a + b * c / d + e B) (a + b) * c / d + e
C) (a + b) * c / (d + e) D) (a + b * c) / d + e
E) none of the above

17) What value is assigned to the variable Average below?

```
int x = 4, y = 8, z = 5, w = 4;
double Average = (x + y + z + w) / 4;
```

- A) 5.25 B) 5 C) 5.0 D) 4.75 E) none of the above

18) Given the declaration `int TestScore = 78;`, which of the output statements given below will produce the output:

```
1234567890
Score: 78
```

- A) `cout << "1234567890" << endl`
 `<< "Score: " << TestScore << endl;`
- B) `cout << "1234567890" << endl`
 `<< "Score:" << " " << TestScore << endl;`
- C) `cout << "1234567890" << endl`
 `<< "Score:" << setw(4) << TestScore << endl;`
- D) all of the above E) A and B only F) A and C only
- G) B and C only H) none of the above

19) Among the C++ operators `+`, `-`, `*`, `/`, and `%`, which have the lowest precedence when an expression is evaluated?

- A) `+` and `-` B) `*` and `/` C) `*`, `/`, and `%`
- D) `+`, `-`, and `%` E) none of the above

20) At the hardware level, the values 5 and 5.0 are stored in exactly the same way.

- A) True B) False C) Maybe