

Basics

Exercises

CS185

Copyright Notice

Copyright © 2013 DigiPen (USA) Corp. and its owners. All Rights Reserved

No parts of this publication may be copied or distributed, transmitted, transcribed, stored in a retrieval system, or translated into any human or computer language without the express written permission of DigiPen (USA) Corp., 9931 Willows Road NE, Redmond, WA 98052

Trademarks

DigiPen® is a registered trademark of DigiPen (USA) Corp.

All other product names mentioned in this booklet are trademarks or registered trademarks of their respective companies and are hereby acknowledged.

1. What does the code below print out?

```
int a = 4;
int b = 2;
a %= b;

std::cout << a << std::endl;
```

- ☐ 0
- ☐ 4
- ☐ 2

2. What does the code below print out?

```
int a = 2;
int b = 4;
a %= b;

std::cout << a << std::endl;
```

- ☐ 4
- ☐ 2
- ☐ 0

3. What does the code below print out?

```
int a = 3;
int b = 2;
int c = 1;

a = b++ * c;
b = c-- * 5;

std::cout << "a = " << a << " b = " << b << " c = " << ++c << std::endl;
```

- ☐ a = 2 b = 5 c = 1
- ☐ a = 3 b = 0 c = 1
- ☐ a = 3 b = 0 c = 0

4. What does the code below print out?

```
int a = 1;
int b = 1;
int c = 1;
int d = 1;

a = (((b + 1) * (a + c--)) * d) * d;
b += c;
c -= a;
d /= b + 1;

std::cout << "a = " << a << " b = " << b
          << " c = " << c << " d = " << d << std::endl;
```

- ☐ a = 0 b = 1 c = 1 d = 0
- ☐ a = 4 b = 1 c = -4 d = 0.5
- ☐ a = 4 b = 1 c = -4 d = 0

5. Add parentheses to the following expression to make the order of evaluation clearer.

Code	<code>e = a + b * c - d</code>
Answer	<code>a + (b * c) - d</code>

6. Add parentheses to the following expression to make the order of evaluation clearer.

Code	<code>d = a++ * c++ - b %= a + e;</code>
Answer	<code>(a++ * c++) - (b %= a) + e;</code>

7. Add parentheses to the following expression to make the order of evaluation clearer.

Code	<code>d = c %= b + a %= e</code>
Answer	<code>d = (c %= b) + (a %= e);</code>

8. What output is produced by the following **cout** statements?

Code	<pre>int i = 8, j = 4; std::cout << i++ - ++j << std::endl; std::cout << i << " " << j << std::endl;</pre>
Answer	<pre>3 9 5</pre>

9. What output is produced by the following **cout** statements?

Code	<pre>int i = 5, j = 4; std::cout << i++ + --j << std::endl; std::cout << i << " " << j << std::endl;</pre>
Answer	<pre>8 6 3</pre>

10. What output is produced by the following **cout** statements?

Code	<pre>int i = 2, j = 3, k = 7; std::cout << i++ - j++ + --k << std::endl; std::cout << i << " " << j << " " << k << std::endl;</pre>
Answer	<pre>5 3 4 6</pre>

11. What output is produced by the following **cout** statement?

Code	<pre>int a = 3, b = 6, c = 16, d = 5; std::cout << b + c / d / a << std::endl;</pre>
Answer	7

12. What output is produced by the following **cout** statement?

Code	<pre>int a = 3, b = 6, c = 16; std::cout << b % c / (a + 1) << std::endl;</pre>
Answer	1

13. What does the code below print out?

```
int x = 10;
if (x++ == 11)
{
    x = 12;
}

std::cout << x;
```

- ☐ 10
- ☐ 11
- ☐ 12
- ☐ none of the above

14. What does the code below print out?

```
int a = 5, b = 3;

if (a > b && b > 0 && ++a == 6)
{
    std::cout << "true, the value of a is " << a;
}
else
{
    std::cout << "false, the value of a is " << a;
}
```

- ☐ true, the value of a is 5
- ☐ true, the value of a is 6
- ☐ false, the value of a is 5
- ☐ false, the value of a is 6

15. What does the code below print out?

```
int a = 5, b = 3;

if (a > b && b > 5 && ++a == 6)
{
    std::cout << "true, the value of a is " << a;
}
else
{
    std::cout << "false, the value of a is " << a;
}
```

- ☐ true, the value of a is 5
- ☐ true, the value of a is 6
- ☐ false, the value of a is 5
- ☐ false, the value of a is 6

16. What does the code below print out?

```
int a = 5, b = 3;

if (a > b || b > 5 || ++a == 6)
{
    std::cout << "true, the value of a is " << a;
}
else
{
    std::cout << "false, the value of a is " << a;
}
```

- ☐ true, the value of a is 5
- ☐ true, the value of a is 6
- ☐ false, the value of a is 5
- ☐ false, the value of a is 6

17. What does the code below print out?

```
int a = 5, b = 3;

if (a > b && b > 5 || ++a == 6)
{
    std::cout << "true, the value of a is " << a;
}
else
{
    std::cout << "false, the value of a is " << a;
}
```

- ☐ true, the value of a is 5
- ☐ true, the value of a is 6
- ☐ false, the value of a is 5
- ☐ false, the value of a is 6

18. What is the value of **number** after the loop executes?

```
int number = 0;
int a = 10, b = 5;

while (a + b > 10)
{
    number += (a + b) % 10;
    a += 2;
    b -= 3;
}
```

- ☐ 12
- ☐ 13
- ☐ 14
- ☐ 15

19. What is the value of **number** after the loop executes?

```
int number = 0;
int a = 10, b = 5;
int limit = a * b;
int i;

for (i = 0; i < limit; ++i)
{
    number += a % (a + b) + b;
}
```

- ☐ 450
- ☐ 500
- ☐ 550
- ☐ 600

20. What is the value of **number** after the loop executes?

```
int number = 0;
int a = 3, b = 2;
int limit = a * b;
int i;

for (i = 0; i < limit; ++i)
{
    int c = number;
    number += a;
    while (c != 0)
    {
        c /= 5;
        number += c;
    }
}
```

- ☐ 32
- ☐ 34
- ☐ 36

21. What is the output of the following code?

```
int i = 0;
int b = 0;

while (i < 5)
{
    while(1)
    {
        b++;
        if ((b % 2) == 0)
        {
            i++;
            break;
        }
    }
}

std::cout << b << std::endl;
```

- ☐ 9
- ☐ 10

22. What does the code below print out?

Code

```
for (int i = 0; i < 30; ++i)
{
    if ((i % 3) == 0)
    {
        continue;
    }

    std::cout << i << std::endl;
}
```

Answer

23. Write the code to produce the following output:

Expected output	<pre>5 4 3 2 1 4 3 2 1 3 2 1 2 1 1</pre>
Answer	