

Exercise 3: Operators

1. Data variables *x*, *y*, *z* are declared as follows:

```
int x = 5, y = 6, z = 4;
```

```
double w = 3.5;
```

Evaluate each of the following statements, if possible. If it is not possible, state the reason.

a. $(x + z) \% y$

b. $(x + y) \% w$

2. Do a walk-through to find the value assigned to **e**. Assume that all variables are integers and they are properly declared.

```
a = 3;
```

```
b = 4;
```

```
c = (a % b) * 6;
```

```
d = c / b;
```

```
e = (a + b + c + d) / 4;
```

3. Which of the following are valid C++ assignment statements? Assume that *i*, *x* and *percent* are *double* variables.

a. $i = i + 5;$

b. $x + 2 = x;$

c. $x = 2.5 * x;$

d. $\text{percent} = 10\%;$

- 4a. Determine the output of the following code segment.

```
int x, y, z=4;
```

```
y = (7+6) % 5 / 2;      cout << y << "\n" ;
```

```
z *= 3 + 2;             cout << z << "\n" ;
```

```
x=y==z;                cout << x << "\n" ;
```

- 4b. Determine the output of the following code segment.

```
char x, y;
```

```
int z= 61;
```

```
x = 'a' + 10;
```

```
y = z +10;
```

```
cout << x << "\n" ;
```

```
cout << y << "\n" ;
```

```
cout << (z+10) << "\n" ;
```

5. Spot and correct the errors in the following code:

```
#include <iostream>
using namespace std;

int main()
{
    int weight;
    int result;

    cout << "Enter your weight in lbs: ";
    cin >> "weight";
    result == weight x 2.2;
    cout << "\nYour weight is : " << setprecision
        << result << endl;
    return 0;
}
```

- 6a. The equivalent resistance of two resistors connected in parallel is given by the equation:
$$R = R1 * R2 / (R1 + R2)$$

Write a program that prompts the user to enter the value of the two resistors. The program then calculates and displays the equivalent resistance.
- 6b. Write a program that calculates the equivalent resistances of two resistors connected in series and parallel. The user will be prompted to enter the values of the two resistors. A sample run of the code is shown below:

Program to calculate equivalent resistances in series and parallel.

Enter the value of the first resistor : 5

Enter the value of the second resistor: 20

The equivalent resistance in series is 25 Ohms.

The equivalent resistance in parallel is 4 Ohms.