

Answers to Review Questions

Chapter 3

1. `cin >> age >> pay >> section;`
2. A) `cin >> description;`
B) `getline(cin, description);`
3. `iostream and iomanip`
4. `5, 22, 20, 6, 46, 30, 0, 3, 16`
5. `a = 12 * x;`
`z = 5 * x + 14 * y + 6 * k;`
`y = pow(x, 4);`
`g = (h + 12) / (4 * k);`
`c = pow(a, 3) / (pow(b, 2) * pow(k, 4));`
6. C
7. B
8. `unitsEach = static_cast<double>(qty) / salesRep;`
9. `const int RATE = 12;`
10. `x += 5;`
`total += subtotal;`
`dist /= rep;`
`ppl *= period;`
`inv -= shrinkage;`
`num %= 2;`
11. `east = west = north = south = 1;`
12. `cout << setw(8) << fixed << showpoint`
`<< setprecision(2) << divSales;`
13. `cout << setw(12) << fixed`
`<< setprecision(4) << totalAge;`
14. `cout << setw(12) << left << showpoint`
`<< setprecision(8) << population;`
15. `cos`
16. `sin`
17. `tan`
18. `exp`
19. `fmod`
20. `log`
21. `log10`
22. `pow`
23. `sqrt`
24. `cmath`
25. *Display "Enter the customer's maximum amount of credit: ".*
Read maxCredit.
Display "Enter the amount of credit the customer has used: ".
Read creditUsed.
availableCredit = maxCredit – creditUsed.

Display "The customer's available credit is \$".
Display availableCredit.

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

int main()
{
    double maxCredit, creditUsed, availableCredit;

    cout << "Enter the customer's maximum amount of credit: ";
    cin >> maxCredit;
    cout << "Enter the amount of credit used by the customer: ";
    cin >> creditUsed;
    availableCredit = maxCredit - creditUsed;
    cout << "The customer's available credit is $";
    cout << availableCredit << endl;
    return 0;
}
```

26. *Display "Enter the amount of the sale: ".*
Read saleAmount.
Display "Enter the sales tax rate: ".
Read taxRate.
*salesTax = saleAmount * taxRate.*
saleTotal = saleAmount + salesTax.
Display "The sales tax is \$".
Display salesTax.
Display "The sale total is \$".
Display saleTotal.

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

int main()
{
    double saleAmount, taxRate, salesTax, totalSale;

    cout << "Enter the amount of the sale: ";
    cin >> saleAmount;
    cout << "Enter the sales tax rate: ";
    cin >> taxRate;
    salesTax = saleAmount * taxRate;
    totalSale = saleAmount + salesTax;
    cout << "The sales tax is $" << salesTax << endl;
    cout << "The sale total is $" << totalSale << endl;
    return 0;
}
```

27. *Display "Enter the bowler's score for the 1st game: ".*
Read score1.
Display "Enter the bowler's score for the 2nd game: ".
Read score2.
Display "Enter the bowler's score for the 3rd game: ".

Read score3.

averageScore = (score1 + score2 + score3) / 3.

Display "The bowler's average score is :".

Display averageScore.

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

int main()
{
    int score1, score2, score3, averageScore;

    cout << "Enter the bowler's score for the 1st game: ";
    cin >> score1;
    cout << "Enter the bowler's score for the 2nd game: ";
    cin >> score2;
    cout << "Enter the bowler's score for the 3rd game: ";
    cin >> score3;
    averageScore = (score1 + score2 + score3) / 3;
    cout << "The bowler's average score is :";
    cout << averageScore << endl;
    return 0;
}
```

28. `#include <iostream>` is missing.
Each `cin` and `cout` statement starts with capital C.
The `<<` operator is mistakenly used with `cin`.
The assignment statement should read:
`sum = number1 + number2;`
The last statement should have `<<` after `cout`.
The last statement is missing a semicolon.
29. The first `cin` statement should read:
`cin >> number1 >> number2;`
The assignment statement should read:
`quotient = static_cast<float>(number1) / number2;`
The last statement is missing a semicolon.
30. The variables should not be declared `const`.
The last statement is missing a semicolon.
31. There shouldn't be a semicolon after the `#include` directive.
The function header for `main` should read:
`int main()`
The combined assignment operators improperly used.
Those statements should be:
`number1 *= 50;`
`number2 *= 50;`

32. There shouldn't be a semicolon after the `#include` directive.
 The function header for `main` should read:

```
int main()
```

 The first two `cout` statements should end with a semicolon.
 The variable `number1` is used, but never defined.
 The combined assignment operator is improperly used. The statement should read:

```
half /= 2;
```

 There is also a logical error in the program. The value divided by 2 should be `number1`, not `half`.
 The following statement:

```
cout << fixedpoint << showpoint << half << endl;
```

 should read:

```
cout << fixed << showpoint << half << endl;
```
33. There shouldn't be a semicolon after the `#include` directive.
`name` should be declared as an array.
 The following statement:

```
cin.getline >> name;
```

 should read:

```
cin >> name;
```
34. Your monthly wages are 3225.000000
 35. 6 3 12
 36. Hello George Washington
 37. Minutes: 612002.0000
 Hours: 10200.0332
 Days: 425.0014
 Months: 13.9726
 Years: 1.1644