1.   What manipulator inserts a new line character in the output stream?

Answer

endl

2.   Write a C++ statement that extracts an integer from the stream cout and places it in the object Count.

Answer

```
cout >> Count;
```

3.   Under what circumstances should function `main()` return a nonzero value?

Answer

Function `main()` should return a nonzero value.

4. Write a C++ program that computes a tip on a meal purchase. Since you are generous, use 17 percent as the tipping rate.

Answer

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

    // Input meal price
    cout << "Price of meal ? ";
    float Price;
    cin >> Price;

    // Compute and output recommended tip
    cout << "Tip on $" << Price << " is ";
    cout << "$" << Price * 0.17 << endl;
    return 0;
}
```

5.   Suppose a short is 16 bits on a particular machine. How big must an int be?

Answer

16 bits

6.   How many bits does the ASCII character set use to encode a character?

Answer

7

7.   What type of C++ object is used to represent real numbers?

Answer

`float`

8.   What is the C++ escape sequence for including a newline in a string?

Answer

\n

9.   What is the C++ escape sequence for include a double quote ('"') in a string?

Answer

\"

11.   Name the two numeric components of a floating-point number.

Answer

mantissa and exponent

14.   Give the standard scientific notation for the C++ floating-point constant `1.13E-10`.

Answer

1.13×10^{-10}

15.   What are the allowable characters for forming valid a C++ name?

Answer

The allowable characters are letters (upper and lowercase), digits, and underscores.

16.   Is `Window$Cost` a valid C++ name?

Answer

No

17. In C++ a name that has a special meaning to the C++ compiler is called a
_____.

Answer

keyword

18.   Write a C++ definition that defines and initializes the int object HeadCount to 25.

Answer

```
int HeadCount = 25;
```

19. Write a C++ definition that defines and initializes the float object MovingAverage to 25.0.

Answer


```
float MovingAverage = 25.0;
```

20.   Using the notation <value, type> give the value of the C++ expression 23.0 + 8

Answer

<21.0, double>

21.   Using the notation <value, type> give the value of the C++ expression 10 / 12.

Answer

<0, int>

23.   Using the notation <value, type> give the value of the C++ expression 15 / 14.

Answer

<1, int>

24.   Using the notation <value, type> give the value of the C++ expression 10L / 2.

Answer

<5, long>

25.   Using the notation <value, type> give the value of the C++ expression `25.5L / 5`.

Answer

<5.1, long double>

26.   Using the notation <value, type> give the value of the C++ expression 5 / 2.

Answer

<2, int>

27. Write a C++ program that converts U.S. dollars to Canadian dollars. Assume a conversion rate of 1.54 Canadian dollars for each U.S. dollar.

Answer

```
#include <iostream>
#include <string>
using namespace std;
int main() {
   cout << "Enter U.S. dollar amount: ";
   float USDollars;
   cin >> USDollars;

   // Convert to Canadian dollars and output
   float CanadianDollars = USDollars * 1.54;
   cout << "$" << USDollars << " U.S. dollars is $"
    << CanadianDollars << " Canadian dollars." << endl;
   return 0;
}
```

28. Using the notation <value, type> give the value of the C++ expression 2 + 5L.

Answer

<7, long>

29.   Using the notation <value, type> give the value of the C++ expression `2.3f + 5.2`.

Answer

<7.5, double>

30.   Using the notation <value, type> give the value of the C++ expression 5.1f + 3L.

Answer

<8.1, float>

31.   Using the notation <value, type> give the value of the C++ expression $3.4L + 3L$.

Answer

<6.4, long double>

32.   Using the notation <value, type> give the value of the C++ expression 2 + 5L.

Answer

<7, long>

33.   Give the value of the C++ expression 3 / 2 + 5.

Answer

6

34.   Give the value fo the C++ expression 5 / 1 + 2.

Answer

7

35.   Give the value of the C++ expression 3 * 2 + 4 * 5.

Answer

26

36.   Give the value of the C++ expression 4 – 2 + 5 / 3 + 2.

Answer

5

37.   Give the value of the C++ expression 10 – 2 + 7 % 2 – 1.

Answer

10

38.   Write a C++ statement that inserts the value of the expression 25 / 4 in the stream cout.

Answer

```
cout << 25 / 4 << endl;
```

39.   What two files must be included in a C++ program to use the iostream library?

Answer

iostream and string

40. Write a C++ program that prompts for and accepts a time and computes the number of seconds elapsed since midnight. The time should be entered in the format HH:MM:SS.

Answer

```cpp
#include <iostream>
#include <string>
using namespace std;
int main() {
   cout << "Please enter a time (HH:MM:SS): ";
   int Hours;
   cin >> Hours;

   char Separator;
   cin >> Separator;

   int Minutes;
   cin >> Minutes;

   cin >> Separator;

   int Seconds;
   cin >> Seconds;

   int ElapsedTime = (Hours * 60  * 60) + (Minutes * 60) + Seconds;
   cout << "Elapsed time since midnight is "
      << ElapsedTime << " seconds." << endl;

   return 0;
}
```