What is the output produced by the following program segment? Don't just run it — trace through it and figure it out by hand (which is a skill you'll need for the exams).

string endline = "endl";

cout << "endl";

cout << endline;

cout << endl;

cout << "endline";

**ANSWER FOR QUESTION 1:**

endlendl

endline

2. Consider the following program:

#include <iostream>

using namespace std;

int main()

{

int len;

cout << "Enter a number: ";

cin >> len;

for (int i = 0; i < len; i++)

{

for (int j = i+1; j < len; j++)

{

cout << " ";

}

cout << "#" << endl;

}

return( 0 );

}

In a brief, simple English sentence, state what this program does (e.g. "It prints a picture of an aqueduct."). Again, figure this out by hand

**ANSWER FOR QUESTION 2:**

The program prints one # symbol per line on len amount of lines with the first line having the # symbol to the far right and other lines successively having the # symbol more to the left until the last line has no blank spaces before the # symbol.

3. Copy the program in problem 2 and change it so that for any input number, the changed program produces exactly the same output as the original, but the changed program uses a while loop instead of a for loop for the inner loop.

**ANSWER FOR QUESTION 3:**

#include <iostream>

using namespace std;

int main()

{

int len;

cout << "Enter a number: ";

cin >> len;

for (int i = 0; i < len; i++)

{

int j = i+1;

while (j < len)

{

cout << " ";

j++;

}

cout << "#" << endl;

}

return( 0 );

}

4. Copy the program you wrote for problem 3 and change it so that for any input number, it produces exactly the same output as the original, but uses a do-while loop instead of a for loop for the outer loop. Be careful! (Hint: How does it behave if len is not positive?) You may need to add a little additional code to make sure the program behaves identically to the program in problem 3.

**ANSWER FOR QUESTION 4:**

#include <iostream>

using namespace std;

int main()

{

int len;

cout << "Enter a number: ";

cin >> len;

for (int i = 0; i < len; i++)

{

int j = i+1;

do {

if ((len > 0) && (j != len)) {

cout << " ";

j++;

}

} while (j < len);

cout << "#" << endl;

}

return( 0 );

}

5. Assume weekday has been previously declared as an int and given a meaningful value. Write a switch statement that for any value of weekday, produces exactly the same output as the following if statement.

if (weekday == 1)

cout << "rainy days and mondays get me down";

else if (weekday == 2)

cout << "ruby tuesday";

else if (weekday == 6 || weekday == 7)

cout << "wonderful weekend";

else

cout << "regular day";

**ANSWER FOR QUESTION 5:**

switch (weekday)

{

case(1):

{

cout << "rainy days and mondays get me down";

break;

}

case(2):

{

cout << "ruby tuesday";

break;

}

case(6):

{

cout << "wonderful weekend";

break;

}

case(7):

{

cout << "wonderful weekend";

break;

}

default:

{

cout << "regular day";

break;

}