Q3

a)

Declares a standard library stdio.h that will be needed for some functions in the program that deal with I/O, like printf.

b)

Change int main() to int main(int argc, char * argv[]).

Check that one argument is given:

```
if (argc != 1){
        printf("Usage: piCalc [precision]");
        return 1;
}
```

Scan precision from argument (line 17):

```
int precision;
sscanf(argc[1], "%.100f", &precision);
```

c)

Before using rand(), include srand(time(NULL)), which needs the #include <time.h> library. This gives a new seed to the random library every time the execution time of the program changes (which should be always).

d)

(float) casts the output of rand() to a floating-point number to make the division a floating-point operation and the final output to be a floating-point number too.

e)

Putting ++ before the operand first increments the variable and only then does other operations, like multiplying in line 31. Line 19 needs the value before incrementing every time the loop is executed, and line 27 does not do any immediate operations. Putting ++ after the operand increments the variable only after the operation.

f)

```
FP * fp = fopen(“result.txt”, “w”);

fprintf(fp, “%.100f”, pi);

fclose(fp);
```