NAME: _____

```
int i = 3;
while (i < 27) {
    cout << i + 1 << " ";
    i = 3 * i;
}
```

Figure 1

1) When the code in Figure 1 runs, what does it output to the console? (20 points)

```
int n = -1;
int k = n++ * 3;
cout << ++n * 4 + k;
```

Figure 2

2) When the code in Figure 2 runs, what does it print? (20 points)

3) Suppose that *t* is an integer variable. Write code that prints "cool" when *t* is greater than 40 and less than 60, and prints “warm” when *t* is greater than 60 and less than 85. For all other values for *t*, print “don’t go outside”. (20 points)

```
int n = 10;
for (int i = 0; i < 40; ++i) {
    n = n + 3;
}
cout << n + 2;
```

Figure 3

4) When the code in Figure 3 runs, what does it print? (20 points)

```
int i = 5;
while (i > 0) {
    i = i - 2;
}
cout << i;
```

Figure 4

5) When the code in Figure 4 runs, what does it print? (20 points)

```
cout << 1 / 3 + 1 / 3.0 << endl;
```

Figure 5

6) When the code in Figure 5 runs, what does it print? (20 points)

```
int i = 4;
for (int k = 0; k < 300; ++k) {
    i = i + 3;
}
cout << i;
```

Figure 6

7) When the code in Figure 6 runs, what does it print? (20 points)

8) Write code that prints 220 random integers that are less than 200. (20 points)

9) Suppose that *n* is an integer greater than 1. Write code that determines whether *n* is prime. The program should print “prime” when *n* is prime and “not prime” when *n* is not prime. (20 points)

10) Show the Unix command to display your current location in the file system. (5 points)

11) Show the Unix command to change the current directory to a folder named *sam* located in your home directory. (5 points)

12) Suppose that you have a file named *main.cpp* that is in a folder in your home directory. Suppose that this folder is your current directory. Show the Unix command to copy main.cpp to your home directory. (5 points)

13) Show the Unix command to list the contents of a folder in your home directory named lab1. (5 points)

EXTRA CREDIT (20 points)

Write code that prints a thousand random integers that are even, greater than 30 and less than 99.