NAME: _____

```
int i = 3;
while (i < 32) {
    cout << i - 1 << " ";
    i = 2 * i;
}
```

Figure 1

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

```
int n = 5;
int k = n++ * 2;
cout << ++n * 2 + k;
```

Figure 2

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

3) Suppose that *h* is an integer variable. Write code that prints "high" when *h* is greater than 6 and “low” when *h* is less than or equal to 6. (20 points)

```
int k = 230;
int n = 10;
for (int i = 0; i < k; ++i) {
    n = n + 2;
}
cout << n + 2;
```

Figure 3

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

```
int i = 6;
while (i <= 606) {
    i = i + 300;
}
cout << i;
```

Figure 4

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

```
int i = 5;
int j = 2;
double x = 5.0;
cout << i / j << endl;
cout << x / j << 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 3000 random integers that are less than 100. (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 list the contents of your current folder. (5 points)

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

12) Suppose that you have a file named *main.cpp* that is in a folder named *lab1*. Suppose that lab1 is in your current directory. Show the Unix command to delete main.cpp. (5 points)

13) Show the Unix command to change your current directory to the parent folder. (5 points)

EXTRA CREDIT (20 points)

Suppose that *n* is an integer greater than 1. Write code that prints the prime factors of n.