Name/Username: _____   Date: _____

For each of the following code fragments determine the value of y at the end:

44. `int x = 18, y = 10; if (x < 10) { if (x > 5) y = 1; } else y = 2;`

45. `int x = 18, y = 10; if (x < 10) if (x > 5) y = 1; else y = 2;`

46. `int y = 6; y = --y - y--;`

What is a "dangling else"? Can you give an example?

33. Consider the following code fragment when embedded in a complete program:

```
if (x > 3) {
   if (x <= 5)
      y = 1;
   else if (x != 6)
      y = 2;
} else
      y = 3;
```

Assume that x has a value of 6 at the beginning of the fragment.

What value does the variable y hold after the fragment gets executed? Why?

38. What's wrong with the following code? Explain your answer:

```
if (2 < 1) ; {
   System.out.println( "Oops." );
}
```

39. What's wrong with the following code? Explain your answer:

```
int i = 0;
while (i < 10) ; {
   i = i + 1;
}
System.out.println (i);
```

Write a program to calculate 1 + 2 + 3 + … + n where n is an integer.

Write a program to calculate $1^2 + 2^2 + 3^2 + … + n^2$ where n is an integer.

Write a program to calculate $1^3 + 2^3 + 3^3 + … + n^3$ where n is an integer.

Write a program to print a scalable pattern such as the one below

```
-bash-3.2$ java Four 16
                  *
               *
             *
           *
         *
      *              *
    *                *
  *                  *
* * * * * * * * * * *
                     *
                     *
                     *
                     *
                     *
                     *
                     *
-bash-3.2$ java Four 21
                    *
                 *
               *
            *
          *
        *
      *
    *                    *
  *                      *
 *                       *
* * * * * * * * * * * * * * * * *
                    *
                    *
                    *
                    *
                    *
                    *
                    *
                    *
                    *
                    *
-bash-3.2$ java Four 9
        *
      *
    *
  *          *
* * * * * * *
          *
          *
          *
          *
-bash-3.2$
```