Pretest: Multiple choice - circle the best answer.

Name ____________________________

Prerequisite Math 162L (Calculus I):

1) The value of $\frac{5}{6} + \frac{1}{4} =$
   
   a) 1  b) $1\frac{1}{12}$  c) $\frac{6}{10}$  d) $1\frac{1}{6}$  e) $1\frac{1}{2}$

2) Given the equation: $y = mx + b$. Let $m = 2$, $b = -3$, $x = 4$, then the value of $y$ is:
   
   a) -3  b) -1  c) 0  d) 2  e) 5

3) Given the equation: $y = 2^x + \frac{3x}{2(x-1)}$. Let $x = 4$, then the value of $y$ is:
   
   a) 16  b) 18  c) 20  d) 22  e) 24
4) Which is the graph of the equation: $y = x^2 - 1$?

![Graphs of equations](image1.png)

a) b) c) d)

5) Which is the graph of the derivative of: $y = x^2 - 1$?

![Graphs of derivatives](image2.png)

a) b) c) d)

Prerequisite CS 152L (Computer Programming Fundamentals):

6) What will be the output of the following Java method:

```java
public static void boo()
{
    int x=0;
    for (int i=1; i<5; i++)
    {
        x = x + i;
    }
    System.out.println("x="+x);
}
```

a) x=4 b) x=5 c) x=7 d) x=10 e) x=15
Use method foo() to answer questions 7-9.

1) public static void foo()
2) { int a[][] = new int[3][4];
3)   for (int i=0; i<3; i++)
4)   { for (int k=0; k<4; k++)
5)     { a[i][k] = (i*4)+k;
6)     }
7)     System.out.println("i="+i);
8)   }
9) System.out.println(a[2][0]);
10) }

7) In a call to method foo(), how many times is line 7 executed?
   a) 1   b) 2   c) 3   d) 7   e) 12

8) In a call to method foo(), how many times is line 5 executed?
   a) 1   b) 2   c) 3   d) 7   e) 12

9) In a call to method foo(), what is the output of line 9?
   a) 4   b) 8   c) 16   d) 20   e) 24

10) What is the output of Java method goo()?

    public static void goo()
    { int a[] = new int[100];
      a[0] = 2;
      a[1] = 2;
      for (int i=2; i<99; i++)
        { a[i] = a[i-1] + a[i-2];
        }
      System.out.println("a[5]="+a[5]);
    }