Sp 2011
EGN 3420 Quiz 5 Name _____

1. Data from an unknown function $y = f(x)$ is shown in the table below.

x	y	f1[ ]	f2[ ]	f3[ ]
0	1			
1	0			
2	3			
4	45			

Fill in the table of divided differences and find the equation of the Newton Divided Difference polynomial

$$f_3(x) = b_0 + b_1(x - x_0) + b_2(x - x_0)(x - x_1) + b_3(x - x_0)(x - x_1)(x - x_2)$$

Numerical values of the coefficients are:

a) $b_0 = 1, \quad b_1 = 2, \quad b_2 = 3, \quad b_3 = 4$

b) $b_0 = 1, \quad b_1 = -1, \quad b_2 = 2, \quad b_3 = -1$

c) $b_0 = 1, \quad b_1 = 2, \quad b_2 = -1, \quad b_3 = 1$

d) $b_0 = 1, \quad b_1 = -1, \quad b_2 = 2, \quad b_3 = 1$

e) none of the above

(4 pts)

Using $f_3(3)$ to estimate $y = f(3)$ results in

a) 0 b) 12 c) 15 d) 16 e) 25 f) none of the above

(1 pt)

2. Consider the Matlab statements

```
x=0:3;
y=3:-1:0;
w=linspace(0,3,3);
```

i) The Matlab statement z=x+y+w (1 pt)

a) will result in an error message b) will execute without an error message

ii) The Matlab statement z=exp (x) (1 pt)

a) will result in an error message b) will execute without an error message

iii) The Matlab statement z=exp(x)*exp(y) (1 pt)

a) will result in an error message b) will execute without an error message

iv) The Matlab statement z=x.*exp(x) (1 pt)

a) will result in an error message b) will execute without an error message

v) The Matlab statement z=y.*exp(w) (1 pt)

a) will result in an error message b) will execute without an error message