

NAME : **Answers**

1. Give all MATLAB commands to solve the linear system  $\begin{cases} 6x_1 + 3x_2 = 4 \\ -2x_1 + x_2 = 0. \end{cases}$

Give also the value of the solution, as accurately as computed by MATLAB.

What are the MATLAB command(s) to verify the solution? Compute the error.

**Answer:**

```
A = [6 3; -2 1]
b = [4 0]'
format long e
x = A\b
```

```
3.333333333333333e-01
```

```
6.666666666666667e-01
```

```
r = b - A*x
```

```
0.000000000000000e+00
```

```
0.000000000000000e+00
```

2. Plot the surface  $z = \sin\left(7e^{-x^2-y^2}\right)$  for  $x$  and  $y$  in the interval  $[-3, +3]$ , using a 101-by-101 grid of points. Give all MATLAB commands.

**Answer:**

```
xa = -3:6/100:+3;
ya = -3:6/100:+3;
[x,y] = meshgrid(xa,ya);
z = sin(7*exp(-x.^2 - y.^2));
mesh(x,y,z)
```

**Alternative:** Bring to class on Monday the answers to assignments 2, 3, and 4 of the first lecture on MATLAB; and assignments 6 and 8 of MATLAB lecture 2.