

TPC 1 – Introdução à Programação em MATLAB

1.

a) `sin(deg2rad(60))/(2+3)`

Output:

`ans = 0.1732`

b) `sqrt(1 + log(10))`

Output:

`ans = 1.873`

c) `exp(1).^2`

Output:

`ans = 7.3891`

2.

`syms x1 x2 x3`

`eq1 = 2*x1 + 3*x2 == 0;`

`eq2 = 3*x2 + 4*x3 == -1;`

`eq3 = x1 + x2 + x3 == -2;`

`[solx1, solx2, solx3] = solve([eq1, eq2, eq3], [x1, x2, x3])`

Output:

`solx1 = -21/10`

`solx2 = 7/5`

`solx3 = -13/10`

3.

a) `x = linspace(-3*pi, 3*pi);`

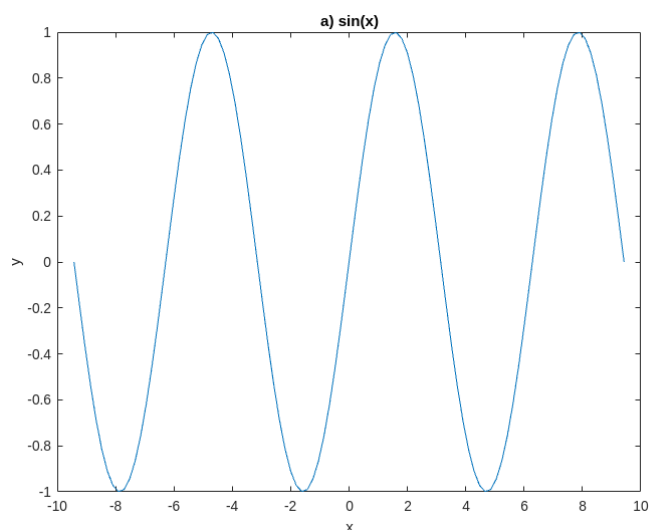
`y = sin(x);`

`plot(x,y)`

`xlabel('x')`

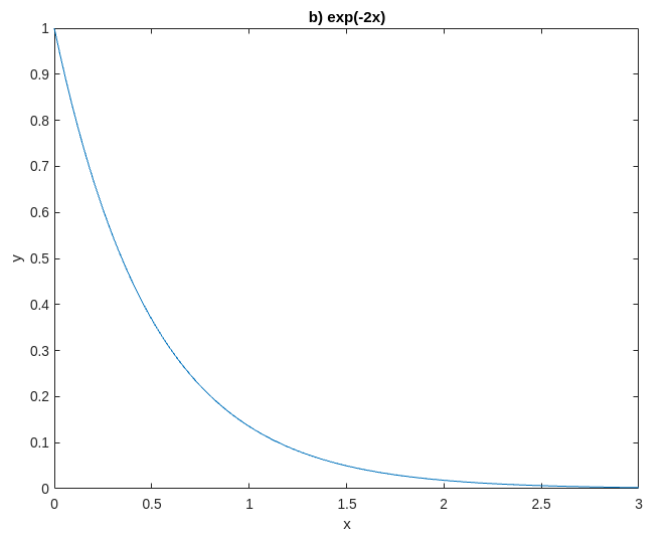
`y label('y')`

`title('a) sin(x)')`

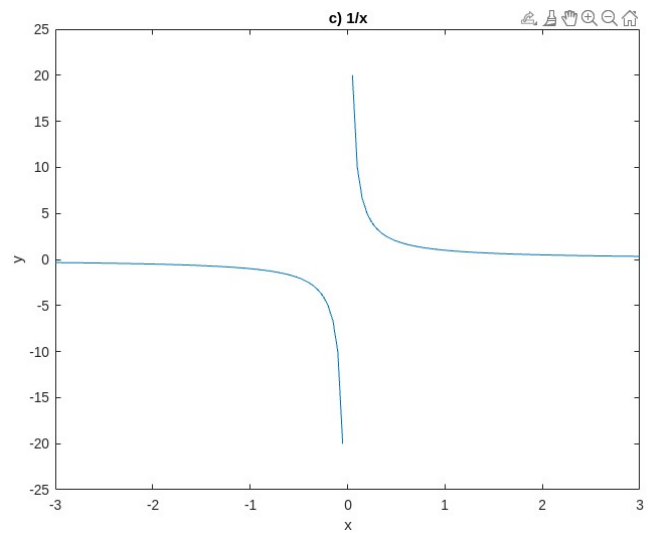


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```
b) x = linspace(0, 3);  
y = exp(-2*x);  
plot(x,y)  
xlabel('x')  
ylabel('y')  
title('b) exp(-2x)')
```

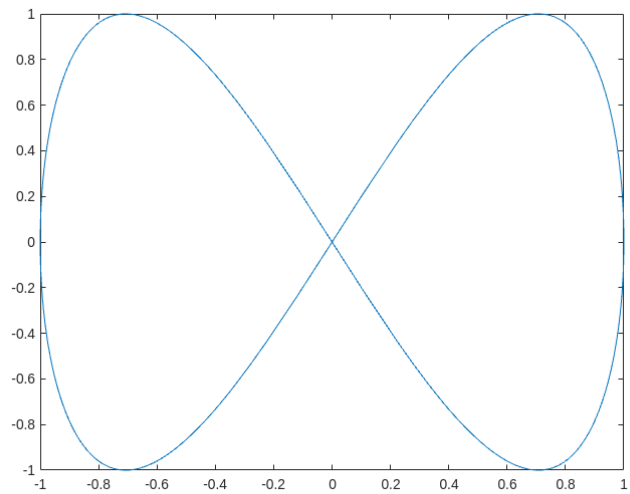


```
c) x = -3:0.05:0.05 + 0:0.05:3;  
y = 1./x;  
plot(x, y)  
xlabel('x')  
ylabel('y')  
title('c) 1/x')
```



4.

a) `syms t`
`xt = cos(t);`
`yt = sin(2*t);`
`fplot(xt,yt, [0, 2*pi])`



b) `syms t`
`xt = sin(t);`
`yt = cos(t);`
`zt = (t.^2)/100;`
`fplot3(xt,yt,zt, [0, 10*pi])`

