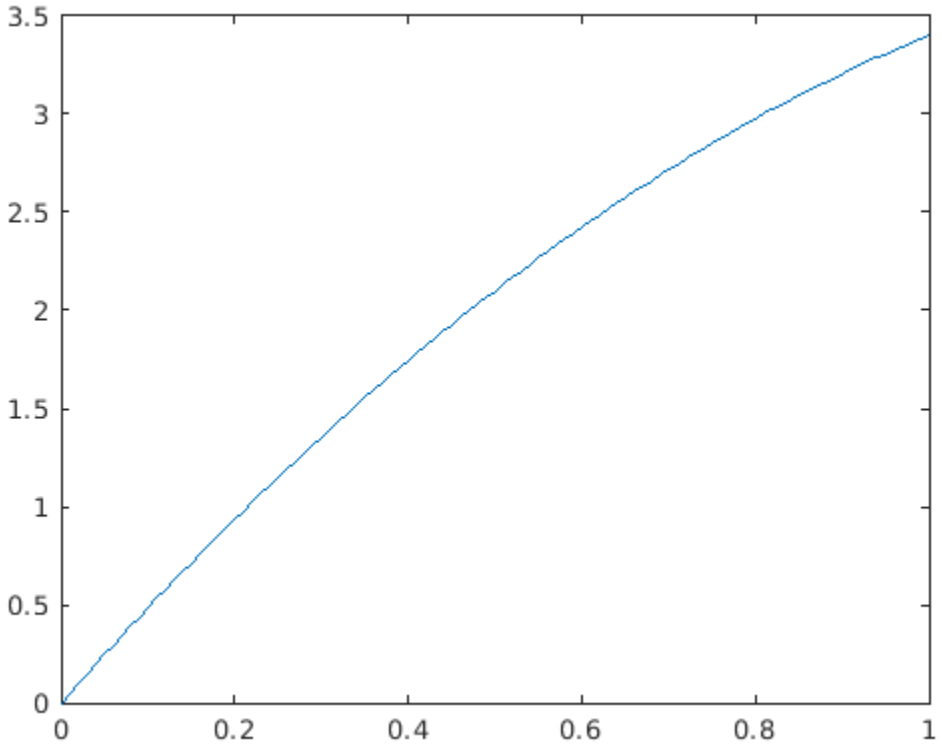
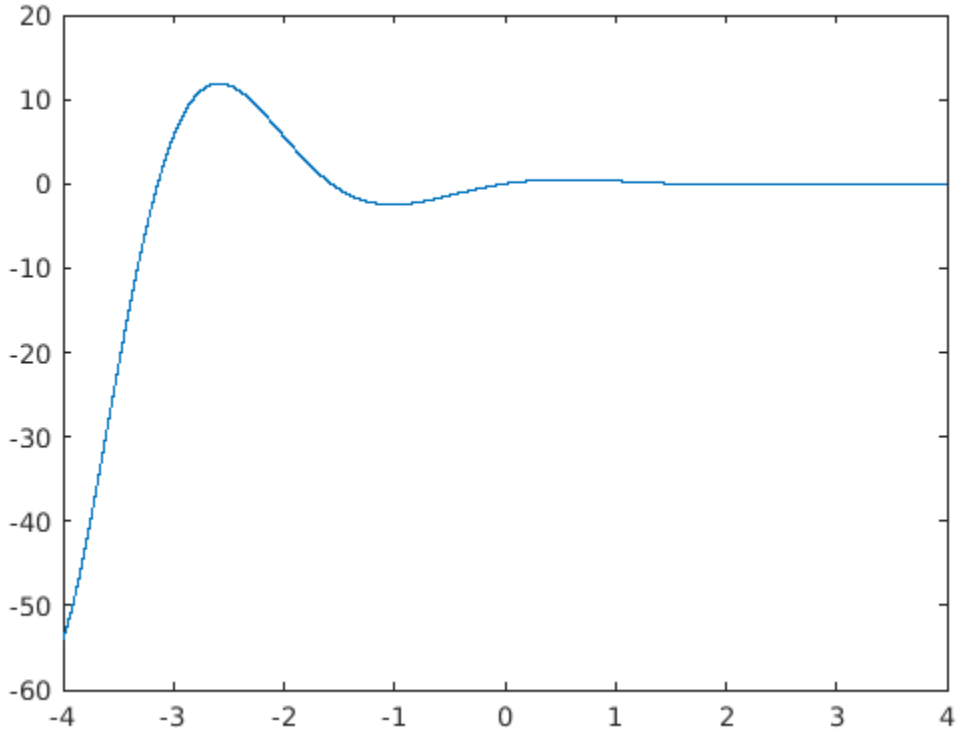
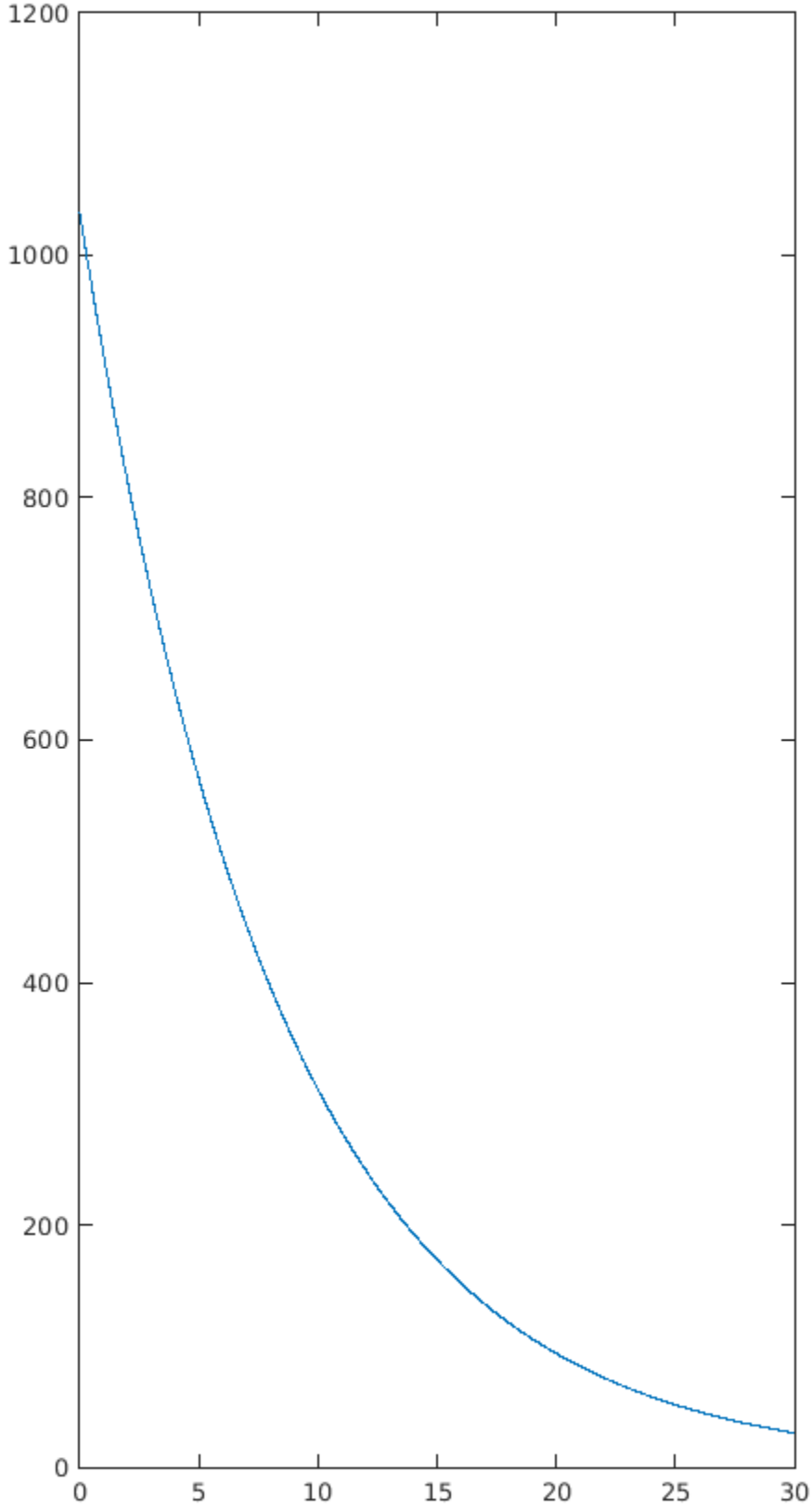
```
disp(factor(8));
disp(aprox_pi(6));
disp(aprox_pi_iterations(pi));


%Exercici 4

v_x = 5;
a = -3.2;
t = (0:1/100:1);
x = v_x.*t + (1/2)*a*t.^2;
figure(1);
plot(t, x);


%Exercici 5

x = (-4:1/1000:4);
y = exp(-x).*sin(2.*x);
figure(2);
plot(x, y);


%Exercici 6

h = (0:1/100:30);
p = 1035.*exp(-0.12*h);
figure(3);
plot(h, p);

%Exercici 7

s = sum(1./[1:10]);

%Exercici 8


n = 10;
A = zeros(n, n);
for i = 1:10
    for j = 1: 10
        if j == i
            A(i, j) = 2 * pi / n;
        elseif j < i
            A(i, j) = i*j;
        %otherwise the value is already 0
        end
    end
end


%Exercici 9
```

```
function fact = factor(n)
    fact = 1;
    for i = 1:n
        fact = fact*i;
    end
end

%Exercici 9

function a_pi = aprox_pi(N)
    a_pi = 0;
    for i = 0:N
        a_pi = a_pi+ 16 ^(-i) * ((4 / (8*i + 1)) - (2 / (8*i + 4)) - (1 /
(8*i + 5)) - (1/ (8*i + 6)));
    end
end
%Para N = 6 ya se obtienen 10 cifras de precision

function i = aprox_pi_iterations(num)
    a_pi = 0;
    i = 0;
    while (a_pi ~= num)
        a_pi = a_pi+ 16 ^(-i) * ((4 / (8*i + 1)) - (2 / (8*i + 4)) - (1 /
(8*i + 5)) - (1/ (8*i + 6)));
        i = i + 1;
    end
    i = i -1;
end
% Para n=10 ya se obtienen los mismos digitos de precision que el que tiene
% guardado MatLab.
```

```
       40320

          3.14159265357288

    10
```


3.5
3
2.5
2
1.5
1
0.5
0
0
0.2
0.4
0.6
0.8
1


20
10
0
-10
-20
-30
-40
-50
-60
-4
-3
-2
-1
0
1
2
3
4


1200
1000
800
600
400
200
0
0
5
10
15
20
25
30

Published with MATLAB® R2023b