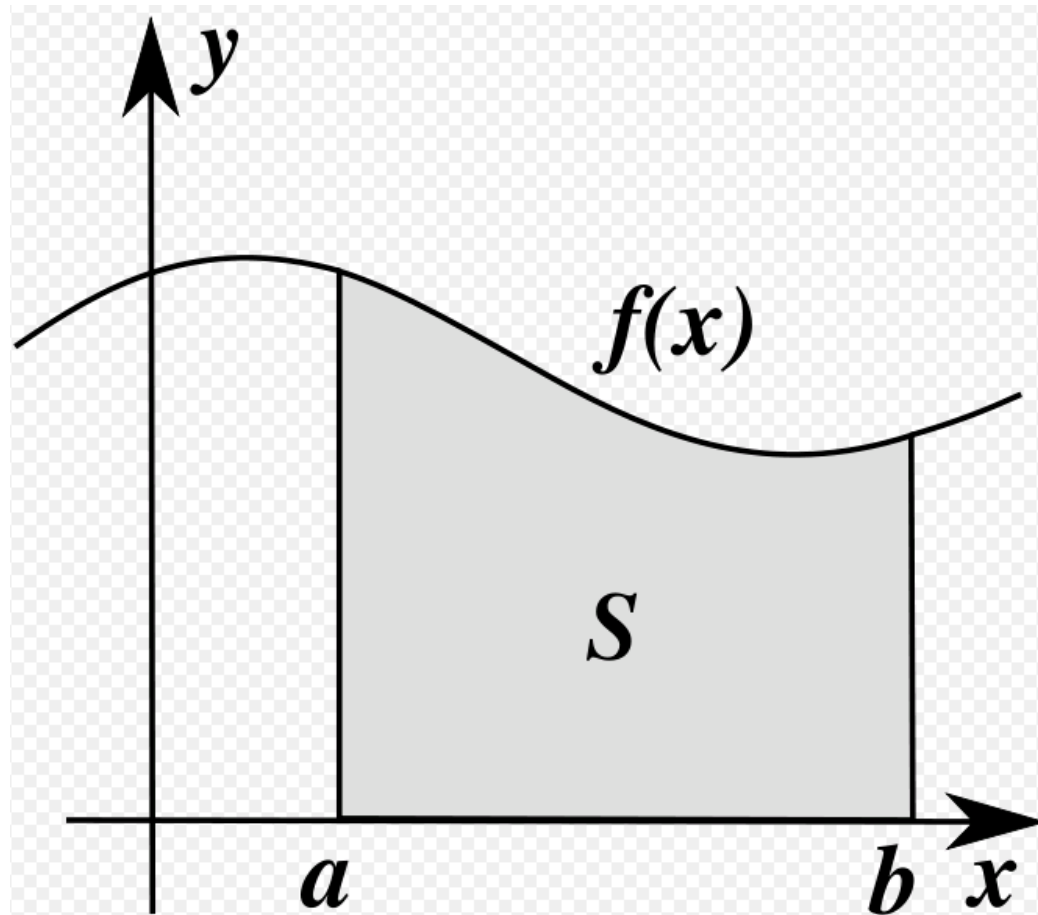


Series

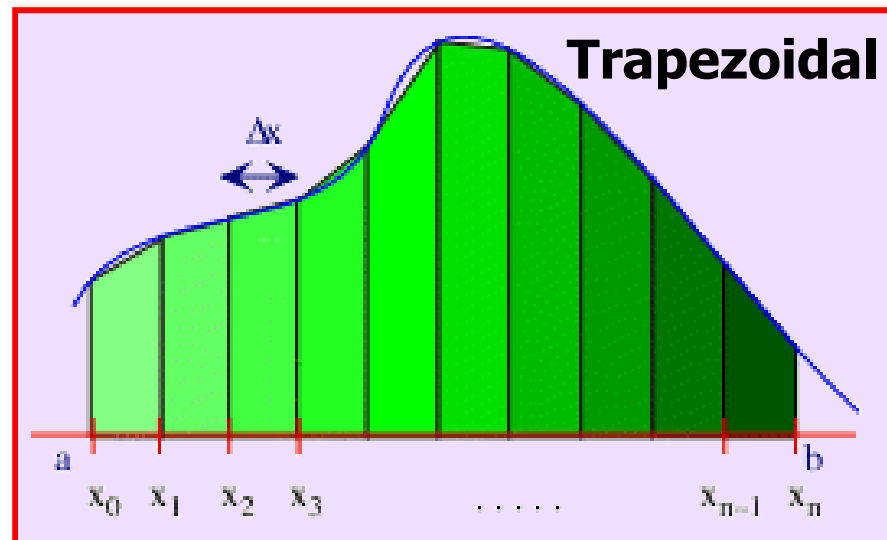
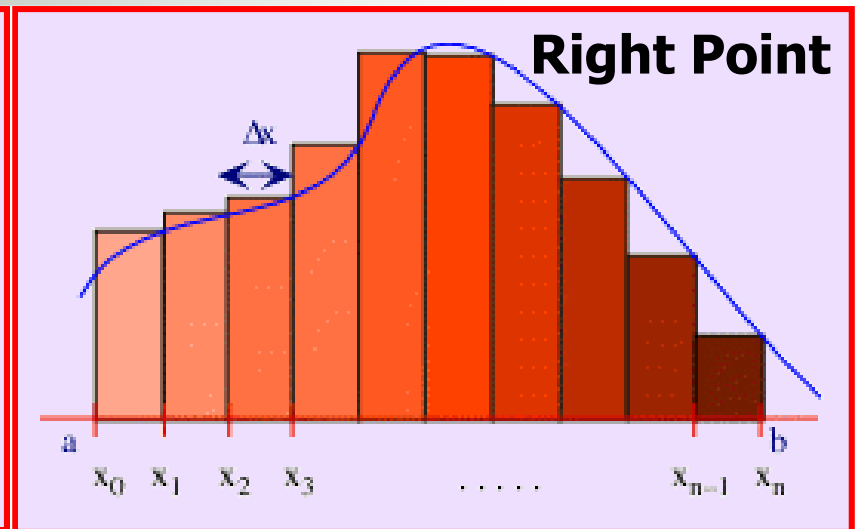
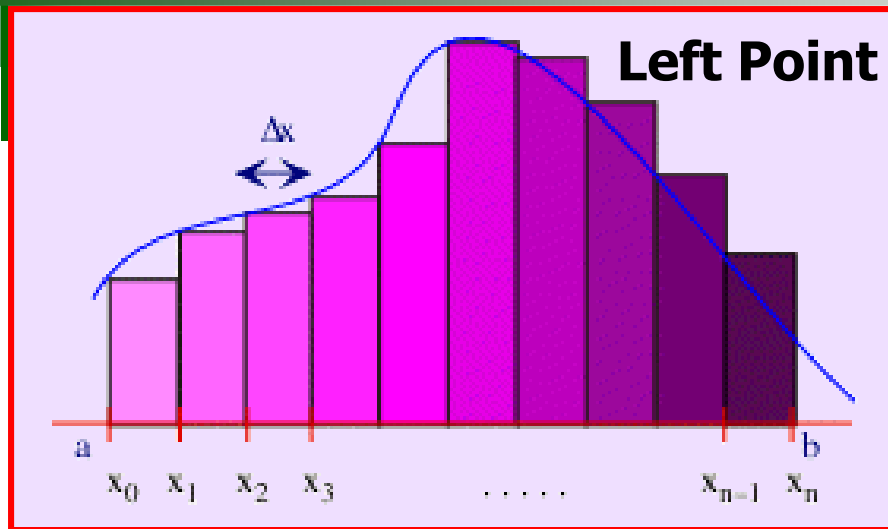
Escriba un programa que calcule y grafique los términos desde $n=1$ hasta un valor especificado por el usuario, también calcule y grafique la sumatoria acumulada de los términos:

$$\frac{2^n n!!}{n!}$$

Numerical Integration

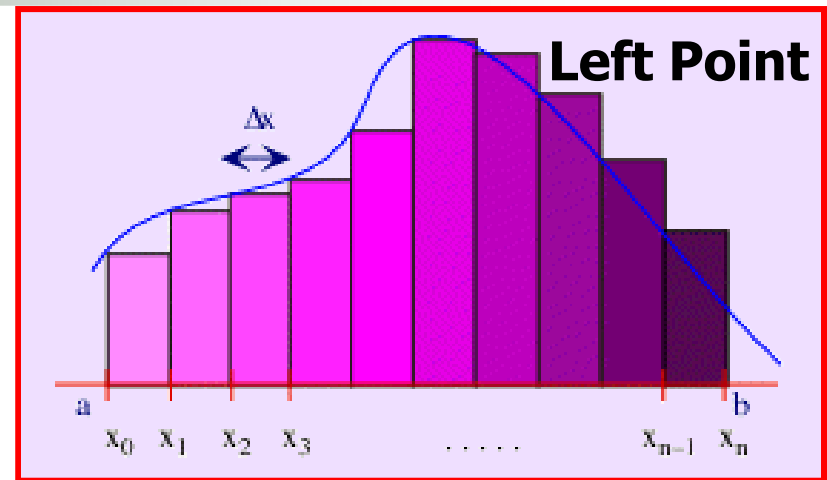
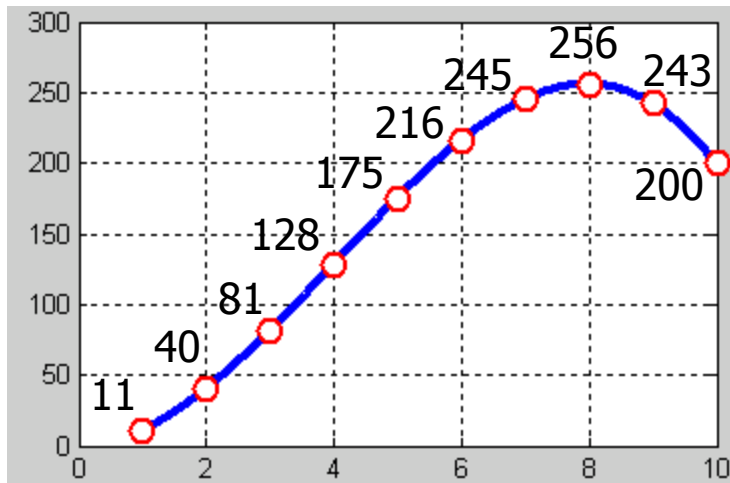


Numerical Integration



Numerical Integration

$$\int_1^{10} 12x^2 - x^3$$



function LPI = leftpointint(x,y)

LPI = 0;

np = length(x);

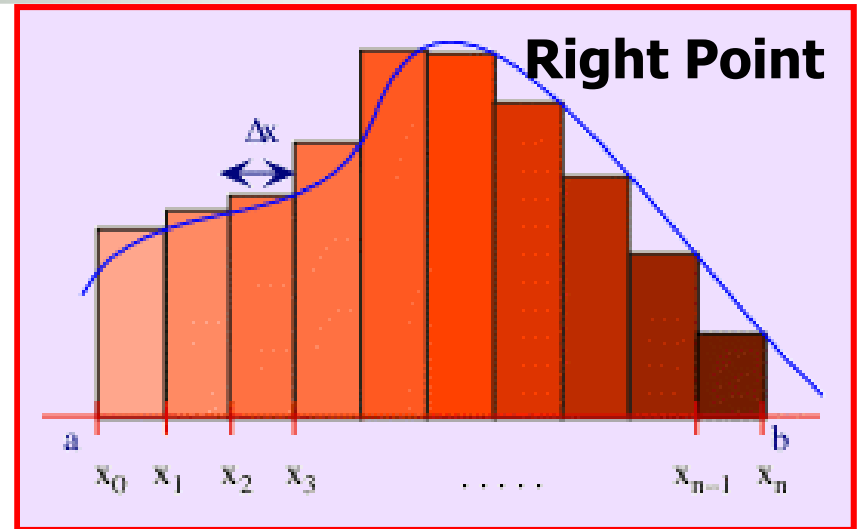
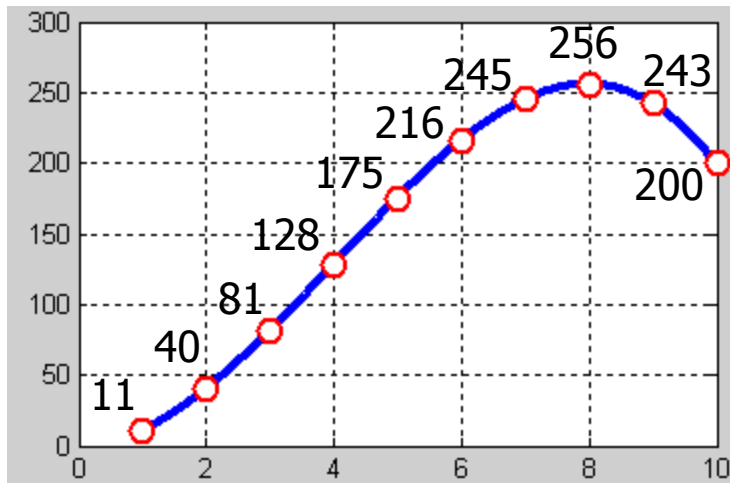
for i=1:np-1

LPI = LPI + y(i)*(x(i+1)-x(i));

end

Numerical Integration

$$\int_1^{10} 12x^2 - x^3$$



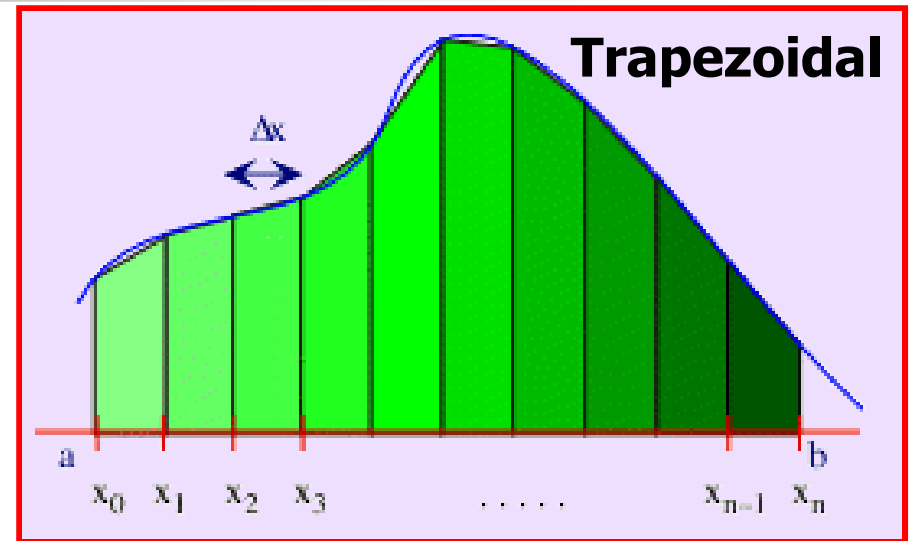
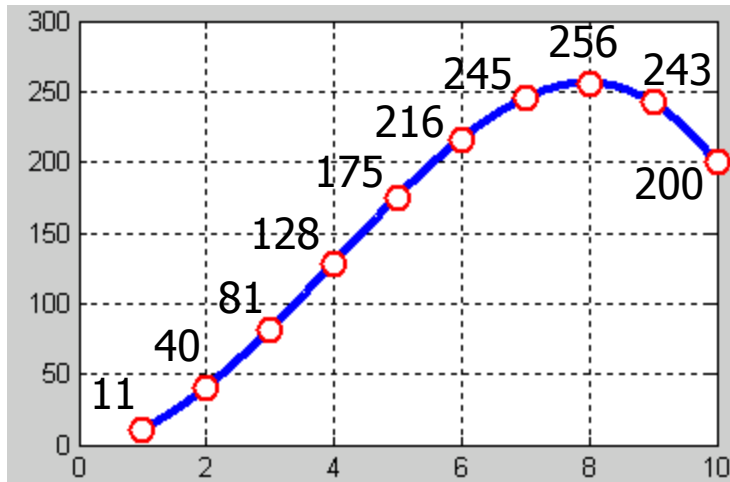
function RPI = rightpointint(x,y)

```
RPI = 0;
np = length(x);
```

```
for i=2:np
  RPI = RPI + y(i)*(x(i)-x(i-1));
end
```

Numerical Integration

$$\int_1^{10} 12x^2 - x^3$$



Function

?

Escriba un programa que lea el archivo "noisydata.txt" y calcule el área bajo la curva usando "left point integration" y "right point integration" .

```
addpath('C:\Users\LAM\Dropbox\INGE 3016 - Fall 2012\matlabs')
expdata = load ('noisydata.txt');

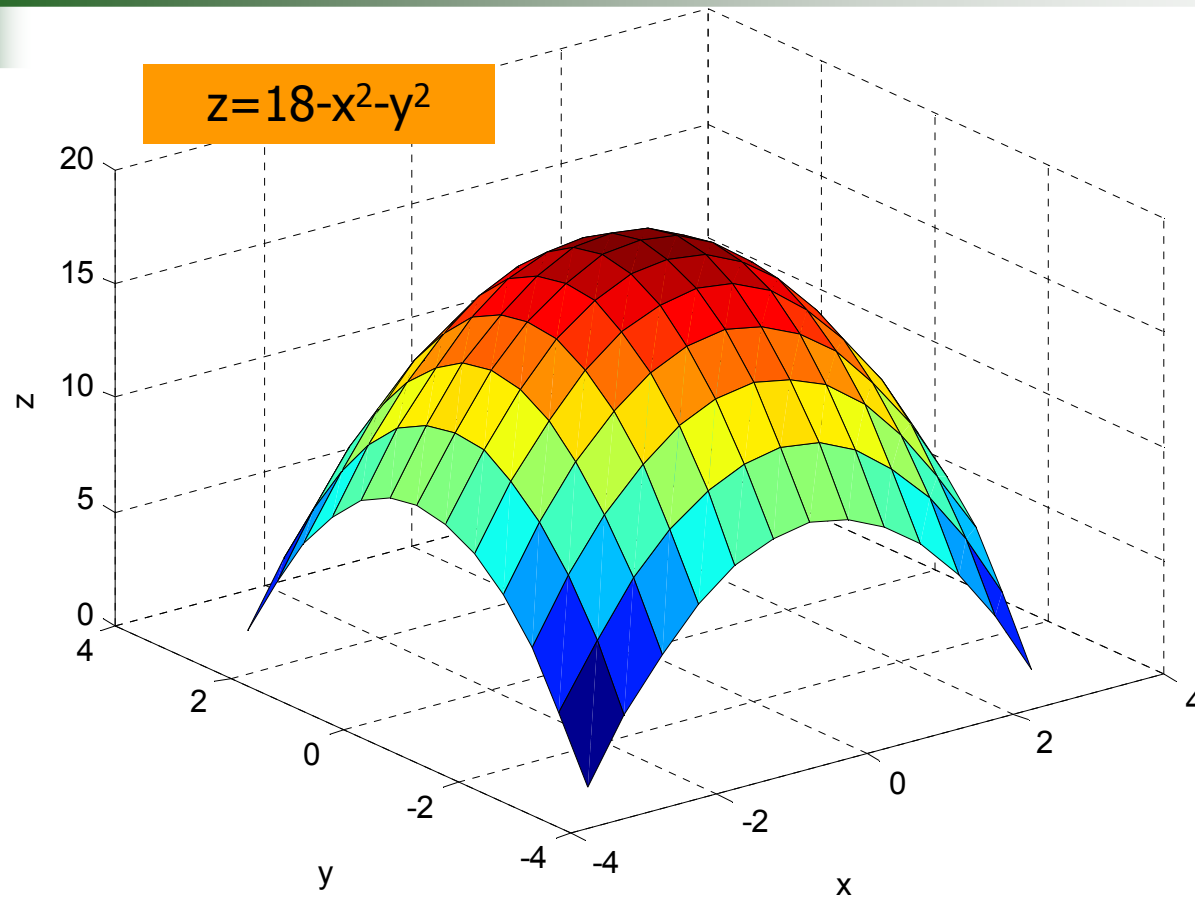
t      = expdata(:,1);
v      = expdata(:,2);

figure; plot(t,v,'ro');
xlabel('time [s]'); ylabel('velocity [m/s]')

arealeft = leftpointint(t,v);
arearight = rightpointint(t,v);

disp(['Integrando por el punto izquierdo el area es = ',num2str(arealeft)]);
disp(['Integrando por el punto derecho el area es = ',num2str(arearight)]);
```

Double integrals



the double integral $\iint z dx dy$ can be interpreted as the volume under the surface $z = f(x,y)$