Polinomio de Lagranje

```
syms x
f = [3950 3870 3820 3900 3790 3751 3756];
t = [1 2 3 4 7 8 9];
C = [t',f']
```

C = 7×2

| | |
|---|---|
| 1 | 3950 |
| 2 | 3870 |
| 3 | 3820 |
| 4 | 3900 |
| 7 | 3790 |
| 8 | 3751 |
| 9 | 3756 |

```
n=length(C);
suma=0;
for i=1:n
L=1;
L1=1;
for j=1:n
if (i==j)
else
L=L*(x-C(j,1))/(C(i,1)-C(j,1));
end
end
suma=suma+C(i,2)*L;
end
%este es el polinomio de Taylor
Lagrange(x) = simplify(suma)
```

Lagrange(x) =

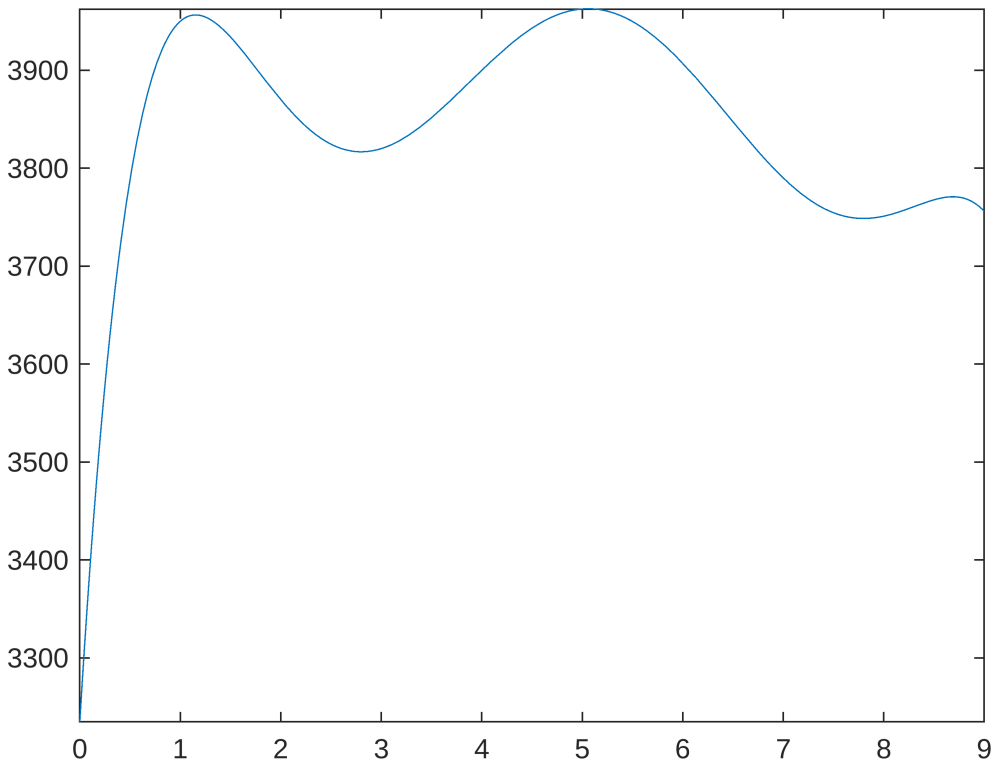
$$-\frac{143\,x^6}{560}+\frac{13127\,x^5}{1680}-\frac{154163\,x^4}{1680}+\frac{173305\,x^3}{336}-\frac{148261\,x^2}{105}+\frac{712247\,x}{420}+\frac{16173}{5}$$

```
Lagrange(5)
```

ans =

$$\frac{19813}{5}$$

```
grid on
fplot(Lagrange)
xlim([0 9])
```


3900
3800
3700
3600
3500
3400
3300
0
1
2
3
4
5
6
7
8
9