Matemáticas 1 - ADE - 2020/2021
01-Funciones-Prácticas 1 for serial number: 1

Exercise 1

Deposits in certain investment account vary from year to year alternating gains and looses periods. We have the following data about the deposits for different years:

year	deposits
0	0
1	1
2	66
4	2092
9	118 737
11	323 301

By means of a interpolation polynomial, obtain the function that yields the deposits in the account for every year t. Employ that function to forecast the exact amount for year 12.

1) The depositis in the account for year 12 are 744 601.

2) The depositis in the account for year 12 are −11.

3) The depositis in the account for year 12 are −3.

4) The depositis in the account for year 12 are 499 236.

5) The depositis in the account for year 12 are −2.

Exercise 2

The population in certain turistic area increases exponentially and is given by the function $P(t)=70\,000\,e^{t/100}$ that indicates the number of resident citizens for every year t. At the same time, depending on the season, the city receives a variable number of tourists given by the trigonometric function $I(t)=5000+3000\,\mathrm{Sin}\left[\frac{t}{2\,\pi}\right]$ that yields the amount of visitors in the area for every moment t (t in years). Determine how many years are necessary until the total nomber of habitants is 113000. (the solution can be found for t between 42 and 47).

1) t=**.1****

2) t=**.3****

3) t=**.5****

4) t=**.7****

5) t=**.9****