E07 - ANN

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1 Interpolação polinomial - Implementação

```
import numpy as np
from numpy import linalg

Xi = np.array([i/10 for i in range(-25, 50, 5)])
Yi = np.array([3.35, 2.6, 3.06, 4.38, 0.49, 0.15, 4.41,
               2.75, 4.3, 3.64, 0.01, 3.21, 4.82, 4.27, 1.85])
grau = len(Xi)
S = np.array([Xi**i for i in range(grau-1, -1, -1)]).transpose()
ans = np.linalg.inv(S).dot(Yi)[::-1]
for i in range(len(ans)):
    print("a{}={:.7f}".format(i, ans[i]))
```

2 Resposta

$a_0 = 0.1500000$
$a_1 = 10.9168740$
$a_2 = 10.9919894$
$a_3 = -36.6481176$
$a_4 = -6.0562367$
$a_5 = 38.4537919$
$a_6 = -5.7304137$
$a_7 = -15.8108623$
$a_8 = 5.4661809$
$a_9 = 2.2537265$
$a_{10} = -1.3517918$
$a_{11} = 0.0405645$
$a_{12} = 0.0938634$
$a_{13} = -0.0209770$
$a_{14} = 0.0014085$

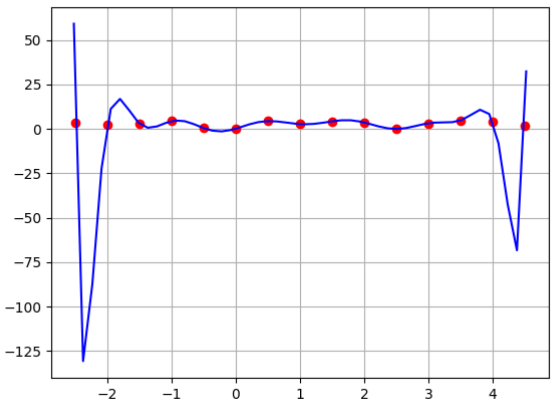

Figure 1: Gráfico gerado usando matplotlib