**Интерполяционный многочлен Лагранжа**

**Лабораторная** работа

Выполнил: Евгений

2003 год

**Интерполирование и экстраполирование данных.**

Многочлен Лагранжа, принимающий заданные значения в узловых точках имеет вид:



Задание . Восстановить многочлен Лагранжа, удовлетворяющий приведенным исходным данным.

Пример:



Варианты:

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1). | | 0 | | 1 | | 2 | | 5 | |
|  | | 2 | | 3 | | 12 | | 147 | |
| 2). | | -2 | | 1 | | 2 | | 4 | |
|  | | 25 | | -8 | | -15 | | -23 | |
| 3). | | -2 | | -1 | | 0 | | 1 | | 2 | |
|  | | 6 | | 0 | | 2 | | 0 | | 6 | |
| 4). | | 0 | | 1 | | 2 | | 5 | |
|  | | 3 | | 4 | | 13 | | 148 | |
| 5). | | -2 | | 1 | | 2 | | 4 | |
|  | | 26 | | -7 | | -14 | | -22 | |
| 6). | | -2 | | -1 | | 0 | | 1 | | 2 | |
|  | | 5 | | 0 | | 1 | | 0 | | 5 | |
| 7). | | -1 | | 0 | | 1 | | 4 | |
|  | | 2 | | 3 | | 12 | | 147 | |
| 8). | | 1 | | 2 | | 3 | | 6 | |
|  | | 2 | | 3 | | 12 | | 147 | |
| 9). | | -3 | | 0 | | 1 | | 3 | |
|  | | 25 | | -8 | | -15 | | -23 | |
| 10). | | -1 | | 2 | | 3 | | 5 | |
|  | | 25 | | -8 | | -15 | | -23 | |
| 11). | | -3 | | -2 | | -1 | | 0 | | 4 | |
|  | | 6 | | 0 | | 2 | | 0 | | 6 | |
| 12). | | -1 | | 0 | | 1 | | 2 | | 3 | |
|  | | 6 | | 0 | | 2 | | 0 | | 6 | |
| 13). | | 2 | | 3 | | 4 | | 7 | |
|  | | 2 | | 3 | | 12 | | 147 | |
| 14). | | -2 | | -1 | | 0 | | 3 | |
|  | | 2 | | 3 | | 12 | | 147 | |
| 15). | | -4 | | -1 | | 0 | | 2 | |
|  | | 25 | | -8 | | -15 | | -23 | |
| 16). | | 0 | | 3 | | 4 | | 6 | |
|  | | 25 | | -8 | | -15 | | -23 | |
| 17). | | -1 | | 0 | | 1 | | 4 | |
|  | | 3 | | 4 | | 13 | | 148 | |
| 18). | | 1 | | 2 | | 4 | | 6 | |
|  | | 1 | | 2 | | 34 | | 146 | |
| 19). | | -3 | | 0 | | 1 | | 3 | |
|  | | 26 | | -7 | | -14 | | -22 | |
| 20). | | -1 | | 2 | | 3 | | 5 | |
|  | | 26 | | -7 | | -14 | | -22 | |
| 21). | | -3 | | -2 | | -1 | | 0 | | 1 | |
|  | | 7 | | 1 | | 3 | | 1 | | 7 | |
| 22). | | -1 | | 0 | | 1 | | 2 | | 3 | |
|  | | 5 | | -1 | | 1 | | -1 | | 5 | |
| 23). | | -1 | | 0 | | 1 | | 2 | | 3 | |
|  | | 2 | | 1 | | 0 | | 1 | | 10 | |
| 24). | | -2 | | -1 | | 0 | | 1 | |
|  | | 1 | | 6 | | 5 | | 4 | |
| 25). | | -3 | | -2 | | -1 | | 0 | |
|  | | 40 | | 27 | | 12 | | 1 | |
| 26). | | -2 | | -1 | | 0 | | 1 | | 2 | |
|  | | -27 | | -4 | | -1 | | -6 | | -7 | |
| 27). | | -1 | | 0 | | 1 | | 2 | |
|  | | -5 | | -10 | | -1 | | 34 | |
| 28). | | -2 | | -1 | | 0 | | 1 | | 2 | |
|  | | 16 | | -1 | | 0 | | 1 | | 8 | |
| 29). | | -2 | | -1 | | 0 | | 1 | | 2 | |
|  | | -23 | | -6 | | 1 | | -2 | | 9 | |
| 30). | | 1 | | 2 | | 3 | | 4 | |
|  | | 1 | | 2 | | 13 | | 40 | |