$$f(x) = 1/(1 + x^2)$$

| Natural Spline | | | | |
|---|---|---|---|---|
| j | $p_i''$ | x | p(x) | f(x) |
| 1 | 0 | **-5** | **0.0384615** | **0.0384615** |
| 2 | 0.0164021 | -4.9 | 0.0402271 | 0.039984 |
| 3 | 0.0592785 | -4.8 | 0.0420091 | 0.0415973 |
| 4 | 0.099425 | -4.7 | 0.0438238 | 0.0433088 |
| 5 | 0.743021 | -4.6 | 0.0456878 | 0.0451264 |
| 6 | -1.87151 | -4.5 | 0.0476174 | 0.0470588 |
| 7 | 0.743021 | -4.4 | 0.049629 | 0.0491159 |
| 8 | 0.099425 | -4.3 | 0.051739 | 0.0513084 |
| 9 | 0.0592785 | -4.2 | 0.0539638 | 0.0536481 |
| 10 | 0.0164021 | -4.1 | 0.0563199 | 0.0561482 |
| 11 | 0 | **-4** | **0.0588235** | **0.0588235** |
| | | … | … | … |
| | | **-2** | **0.2** | **0.2** |
| | | -1.9 | 0.214907 | 0.21692 |
| | | -1.8 | 0.231451 | 0.235849 |
| | | -1.7 | 0.250277 | 0.257069 |
| | | -1.6 | 0.272028 | 0.280899 |
| | | -1.5 | 0.297347 | 0.307692 |
| | | -1.4 | 0.326879 | 0.337838 |
| | | -1.3 | 0.361266 | 0.371747 |
| | | -1.2 | 0.401153 | 0.409836 |
| | | -1.1 | 0.447183 | 0.452489 |
| | | **-1** | **0.5** | **0.5** |
| | | -0.9 | 0.559704 | 0.552486 |
| | | -0.8 | 0.624223 | 0.609756 |
| | | -0.7 | 0.690944 | 0.671141 |
| | | -0.6 | 0.757251 | 0.735294 |
| | | -0.5 | 0.820531 | 0.8 |
| | | -0.4 | 0.878167 | 0.862069 |
| | | -0.3 | 0.927547 | 0.917431 |
| | | -0.2 | 0.966056 | 0.961538 |
| | | -0.1 | 0.991078 | 0.990099 |
| | | **0.0** | **1** | **1** |