

1. Interpolating data with the Newton Interpolation Polynomial. (10 pts)

- Divided difference chart for number 1:

$i$	$x_i$	$f[x_i]$	$f[x_i, x_{i+1}]$	$f[x_i, x_{i+2}]$	$f[x_i, x_{i+3}]$	$f[x_i, x_{i+4}]$
0	0	15				
1	2	-17				
2	4	-125				
3	6	-285				
4	8	-377				

- Coefficients for problem number 1: Write your answers rounded to 2 decimal places.

type	$i = 0$	$i = 1$	$i = 2$	$i = 3$	$i = 4$
$C_i$					

2. Approximate  $f(x) = \frac{1}{1+x^2}$  with  $P_{10}(x)$  over the interval  $[-5, 5]$  using 11 equally spaced nodes and with 11 Chebyshev nodes.

Attach (staple) the graph you produced to this page. (10 pts)