

CS 3513 - Numerical Analysis

Homework #5 - 2006.10.09

Due Date - 2006.10.18

Solutions

Answers will vary, so no solutions will be posted. However, here is an example:

k	x_k	y_k
1	$-\frac{\pi}{2}$	0
2	0	1
3	$\frac{\pi}{2}$	0
4	π	-1
5	$\frac{3\pi}{2}$	0
6	$\frac{\pi}{3}$	$\frac{1}{2}$
7	$-\frac{\pi}{3}$	$\frac{1}{2}$
8	$\frac{2\pi}{3}$	$-\frac{1}{2}$
9	$\frac{\pi}{4}$.7071067810

$$P_8(x) = 0.999999999 + 0.0001371071359x - 0.5003037153x^2 + 0.0000175570152x^3 + 0.04202333997x^4 \\ - 0.0002103279598x^5 - 0.001443277492x^6 + 0.00007323162590x^7 + 0.000007809869333x^8$$

and $TE = 0.008247913686$.