

$n$	$p_n$	$f(p_n)$	$[a_i, b_i]$
	$.5=a$	1.2902	
	$1.5=b$	-3.2717	$[a, b]$
1	1.0	.0347	$[p_1, b]$
2	1.25	-1.4100	$[p_1, p_2]$
3	1.125	-.6091	$[p_1, p_3]$
4	1.0625	-.2670	$[p_1, p_4]$
5	1.03125	-.1111	$[p_1, p_5]$
6	1.015625	-.0370	$[p_1, p_6]$
7	1.0078125	-.0086	$[p_1, p_7]$
8	1.00390625	.0170	$[p_8, p_7]$
9	1.005859375	.0081	$[p_9, p_7]$
10	1.0068359375	.0036	

We have

$$|p - p_{10}| \leq \frac{|p_7 - p_9|}{2} \approx .00098 < 10^{-3}.$$

Thus  $p_{10} = 1.0068359375$  approximates  $p$  to within  $10^{-3}$ .  $\square$

### Class Maple Library

A Maple library of procedures developed in class that are not implemented in Maple or are significantly different from those in Maple is provided under the name nalib.

MAPLE. See classmaplib.mw or classmaplib.pdf.