Solving x - e^(-x) = 0 Over the interval 0 to 1

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Bisection Method:

Last Value of Iteration: 0.567143290410

Second Last Value of Iteration 0.567143290411

Difference: 9.094947e-13

Iterations: 41

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Fixed Point Iteration:

Last Value of Iteration: 0.567143290410

Second Last Value of Iteration 0.567143290409

Difference: 4.989342e-13

Iterations: 51

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Steffenson's Method:

Last Value of Iteration: 0.567143290410

Second Last Value of Iteration 0.567143290410

Difference: 1.110223e-16

Iterations: 6

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Newton's Method:

Last Value of Iteration: 0.567143290410

Second Last Value of Iteration 0.567143290410

Difference: 1.110223e-16

Iterations: 6

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Bisection Method | Fixed Point | Steffenson's | Newton's

Lamda: 0.50000 0.35138 NaN 1e-16

Alpha: 1.00000 0.99996 Inf -0e+00

NOTE: The values for steffensons were so close that they

were counted as 'exact' to mathematica...machine precision.