**Transcendental Equations**

Goal Seek may be used to solve transcendental equations. The first equation we solve in this exercise is the same as that solved in Exercise 1 using the bisection method.

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| --- | --- | --- | --- |
|  | A | B | C |

|  |  |
| --- | --- |
| 1 | Goal Seek and Transcendental equations |

|  |  |  |  |
| --- | --- | --- | --- |
| 2 |  | x | f(x) |
| 3 | Exp(-x) - Sin(x) | 0 |  |
| 4  | Cos(x)- Tan(x)/2 | 1 |  |
| 5  |  |  |  |
| 6  |  |  |  |
| 7  |  |  |  |

1. b) Enter the formulas:

C3: =EXP(-B3) - SIN(B3)

C4: =COS(B4) - TAN(B4)/2

1. Make C3 the active cell and call up Goal Seek from the Tools menu. The *Set Cell* is C3, the *To Value* is zero 0, and the *By Changing Cell* is B3.
2. Click OK. How does the result compare with that obtained in Bisection Method?
3. Find the root of exp(-x) - $\sin(x)$ = 0 with a value close to 3.
4. Find two positive roots for $\cos(θ)$ - $\tan(θ)$/2 = 0.