Fill in each cell of the pictured 6×6 board with one of the following six functions.

$$\sin x, \ \cos x, \ -\sin x, \ -\cos x, \ e^{-x}, \ \text{and} \ -e^{-x}$$

Furthermore, each function should appear exactly once in each row and each column. The arrows between cells indicate a derivative relationship: there is an arrow $f(x) \to g(x)$ if $g(x) = f'(x)$ (though not all derivative relations between cells have an arrow clue).

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