**Properties of Fourier Transforms**

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| **Property** |  |  |
| Linearity |  |  |
| Time Shifting |  |  |
| Frequency Shifting |  |  |
| Conjugation |  |  |
| Time Reversal |  |  |
| Time and Frequency Scaling  |  |  |
| Convolution |  |  |
| Multiplication |  |  |
| Differentiation in Time |  |  |
| Integration |  |  |
| Differentiation in Frequency |  |  |
| Conjugate Symmetry forReal Signals |  |  |
| Symmetry for Real and Even Signals |  |  |
| Symmetry for Real and Odd Signals |  |  |
| Even-Odd DecompositionFor Real Signals |  |  |