**WORKSHEET XXI**

Partial Fraction Decomposition

1. Find the *partial fraction decomposition* of each of the following rational functions. (To check your answers in Mathematica, use the *Apart* command.)











2. Find the *form* of the partial fraction decomposition of each of the following. You need not solve for the constants.









3. Compute the *indefinite integral* of each of the following functions. *(Warning: first convert to a rational function!)*







*We live but a fraction of our lives.*

- [Henry David Thoreau](http://en.wikipedia.org/wiki/Henry_David_Thoreau)

*This is a tricky domain because, unlike simple arithmetic, to solve a calculus problem - and in particular to perform integration - you have to be smart about which integration technique should be used: integration by partial fractions, integration by parts, and so on.*

- [Marvin Minsky](http://web.media.mit.edu/~minsky)

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