Integrals Day 1 – Antiderivatives

F(x) is an antiderivative of the function f(x), meaning F’(x) = f(x).

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| Function | Form of Antiderivative |
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Antidifferentiate each function.

Example A.  Example B. 

Example C.  Example D. 

Example E.  Example F. 

Example G. 

Easy to check your answer – just differentiate!!

The general solution has the +C. This represents a family of functions that could be the antiderivative. To find a particular solution, substitute given values to determine the value of the constant C.

Example H. Find f(x) where f(2) = 3 and f’(x) = 4x + 5

Example I. Solve  , given the point (0, 2) on the function y.

Example J. A particle moves along a scale with velocity v(t) = 3t + 7. If the particle is at 4 on the scale at time t = 1, find the position function s(t).

Example K. Find *f(x)* given that *f’’*(x) = x2 + 3cosx and *f*(0) = 2*, f’*(0) = 3