



Disintegration Lyrics

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Prerequisites

None.

Notes

None.

Document History

Date	Version	Comments
19th June 2014	1.0	Initial creation of the document.

1 The Lyrics

Integration? DIS is how you do it...

There's only four techniques for you to master
 Conquer these, you'll avert disaster
 You've got Partial Fractions, Trig Identities,
 Substitutione, and Parts...

If you're having trouble working out your parts here's a scheme you might not know
 It's flawless, fast and easy; it'll leave you all aglow.
 To show you all how it's done I'll take you through an example
 I haven't got much time but just one will be ample.

If you have the sense
 If you've got the smarts
 Otherwise or hence
 Use DIS for Parts.

Let's integrate $x \cos(x)$. That's a tricky problem
 So let's make a start by drawing up your columns.
 Put the x in the D and the $\cos(x)$ in the I; in the S, a positive sign
 If you don't want to use DIS method then you're a philistine!

In the D we've got 1 and 0 and in the I a sine
 Then minus $\cos(x)$. In the S, alternate the signs.
 Now slide on down the slopes, multiplyin'
 $x \sin(x)$ plus $\cos(x)$: that's so satisfyin'...

If you have the sense
 If you've got the smarts
 Otherwise or hence
 Use DIS for Parts.

2 The Problem

<i>D</i>	<i>I</i>	<i>S</i>
x	$\cos(x)$	$+$
1	$\sin(x)$	$-$
0	$-\cos(x)$	$+$
	\dots	$-$
		\dots

Figure 1: Integrating $\int x \cos(x) dx$

$$\int x \cos(x) dx = x \sin(x) + \cos(x) + c$$