

Me and My Study Buddy are lean, mean, integral machines!

You will be presenting at least one complete solution to the class so place all of your steps in your notebook. [Also, make sure that you take note of the correct solutions during the presentations.]

<i>Our Integrals</i>	<i>Correct Solutions</i>
1. $\int_{\tan 1}^{\tan 8} \frac{dx}{x^2 + 1}$	
2. $\int_e^{e^3} \frac{dt}{t \ln t}$	
3. $\int \frac{\tan^{-1} x \, dx}{1 + x^2}$	
4. $\int_2^7 \frac{x \, dx}{x^2 + 1}$	
5. $\int_x^0 e^{-t} \, dt$	
6. $\int \cot x \ln(\sin x) \, dx$	
7. $\int \frac{\cos x \, dx}{2 \sin x + 3}$	
8. $\int 9^x \sin(9^x) \, dx$	
9. $\int_0^4 \frac{dt}{4t^2 + 9}$	
10. $\int \cos(e^x) e^x \, dx$	
11. $\int \frac{g'(x) \, dx}{g(x)}$	

<i>Our Integrals</i>	<i>Correct Solutions</i>
12. $\int_{-\ln 2}^0 \frac{e^x dx}{1 + e^{2x}}$	
13. $\int \frac{e^x dx}{\sqrt{1 + e^x}}$	
14. $\int_1^{\sqrt{3}} \frac{dx}{(\tan^{-1} x)(1 + x^2)}$	
15. $\int_{-1/2}^0 \frac{(x+1) dx}{\sqrt{1 - x^2}}$	
16. $\int (7 - e^{10t}) dt$	
17. $\int \frac{dx}{x(\ln x)^5}$	
18. $\int \tan(2x+9) dx$	

Important Stuff from Chapter 5

$\int \frac{du}{u} = \ln u + C$	$\int e^u du = e^u + C$	$\int a^u du = \frac{a^u}{\ln a} + C$
$\int \frac{du}{a^2 + u^2} = \frac{1}{a} \tan^{-1} \frac{u}{a} + C$	$\int \frac{du}{\sqrt{a^2 - u^2}} = \sin^{-1} \frac{u}{a} + C$	$\frac{d}{dx} [\ln u] = \frac{1}{u} \frac{du}{dx}$ and $\frac{d}{dx} e^u = e^u \frac{du}{dx}$ and $\frac{d}{dx} a^u = (\ln a)(a^u) \frac{du}{dx}$