



Bilkent University
Department of Mathematics

Quiz # 12
Math 101-Section 09 Calculus I
17 December 2015, Tuesday



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YOUR NAME:

In this quiz you can use only pencils and erasers.

If the given integral formula is correct write **T** inside the box on it's right. If the formula is wrong write **F** in that box and write the correct formula below in the space provided.

Solution: Simply differentiate both sides to check if they are equal!

$\int (2x^2 + 1)e^{x^2} dx = 2xe^{x^2} + C$	F
$\int (2x^2 + 1)e^{x^2} dx = xe^{x^2} + C$	
$\int_0^x \sqrt{9-t^2} dt = \frac{9}{2} \arcsin \frac{x}{2} + \frac{x}{3} \sqrt{9-x^2} + C$	F
$\int_0^x \sqrt{9-t^2} dt = \frac{9}{2} \arcsin \frac{x}{3} + \frac{x}{2} \sqrt{9-x^2}$	
$\int x \arctan x dx = \frac{x^2+1}{2} \arctan x - \frac{x}{2} + C$	T
$\int x \arctan x dx =$	
$\int \frac{dx}{x\sqrt{14x-x^2}} = \frac{\sqrt{14x-x^2}}{7x} + C$	F
$\int \frac{dx}{x\sqrt{14x-x^2}} = -\frac{\sqrt{14x-x^2}}{7x} + C$	