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Quiz 1 A

January 15, 2016 id# ____-____-____-____

NO Calculators, don't need them.

1. Find the indefinite integral. $\int \frac{1}{\sqrt{1-x^2}}dx = \arcsin x + C$

$\cancel{\int (1-x^2)^{-1/2} dx}$

$\cancel{u = 1-x^2}$

$\cancel{du = -2x dx}$

$a = 1$

$u = x$

$du = dx$

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2. Find the indefinite integral. $\int \frac{x}{x^2+5}dx$

$u = x^2+5$

$du = 2x\,dx$

$\frac{1}{2} du = x\,dx$

$= \frac{1}{2}\int \frac{du}{u}$

$= \frac{1}{2}\ln|u| + C$

$= \frac{1}{2}\ln|x^2+5| + C$

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3. Find the indefinite integral. $\int \left(\frac{1-\sin x}{\cos^2 x}\right)dx$

$= \int \left(\frac{1}{\cos^2 x} - \frac{\sin x}{\cos^2 x}\right)dx$

$= \int \left[\sec^2 x - \left(\frac{\sin x}{\cos x}\right)\left(\frac{1}{\cos x}\right)\right]dx$

$= \int (\sec^2 x - \tan x \sec x)\,dx$

$= \tan x - \sec x + C$