Math 141 name Peter Pantz

Quiz 1 A

August 31, 2015 id# ____-____-____-____

NO Calculators, don't need them.

1. Find the indefinite integral. $\int \frac{x}{\sqrt{1-x^2}}\,dx$

$\int x(1-x^2)^{-1/2}\,dx = -1/2 \int u^{-1/2}\,du = -(1-x^2)^{1/2} + C$

$u = 1-x^2$

$du = -2x\,dx$

$-1/2\,du = x\,dx$

$= -1/2(2u^{1/2}) + C$

$= -u^{1/2} + C$

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2. Find the indefinite integral. $\int \frac{1}{x^2+5}\,dx$

$u = x$

$a = \sqrt{5}$

$du = dx$

$= \frac{1}{\sqrt{5}} \arctan\left(\frac{x}{\sqrt{5}}\right) + C$

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3. Find the indefinite integral. $\int (\sec^2 x - \tan x)\,dx$

$= \tan x + \ln|\cos x| + C$