

Philadelphia University
Faculty of Science
Department of Basic Sciences and Mathematics
Calculus 2

Student name: _____

Number: _____

A) Fill in the blanks with the answers

1) The trigonometric substitution that solves the integral $\int \frac{x}{\sqrt{4x^2+25}} dx$ is _____

2) $\int \sec x dx =$ _____

3) The partial fraction decomposition of $\frac{1}{x^3(3x+2)(x^2+3)^2}$ is _____

4) An appropriate choice of u and v for integration by parts of (Do not evaluate the integral)

$\int \tan^{-1} x dx$ $u =$, $v =$

$\int x \ln x dx$ $u =$, $v =$

$\int (x^2 - 2x) \sin x dx$ $u =$, $v =$

5) Use the indicated substitution to rewrite the integral in terms of u (Do not evaluate the integral)

$\int (\sin x)^3 (\cos x)^2 dx$ $u = \cos x$

6) Write the integrals that will be used to find the following integral

$$\int_{-5}^5 \frac{1}{(x-2)(x+3)} dx$$