1 Differentiation

$\frac{d}{dx} \sin x =$

$\frac{d}{dx} \cos x =$

$\frac{d}{dx} \tan x =$

$\frac{d}{dx} \sec x =$

$\frac{d}{dx} \csc x =$

$\frac{d}{dx} \cot x =$

2 Formulas

$\sin 2x =$

$\cos 2x =$

$\sin^2 x + \cos^2 x =$

Pythagorean Identity (tan):

Pythagorean Identity (cot):

3 Theorem

Fundamental Theorem of Calculus:

Intermediate Value Theorem:

Mean Value Theorem:

4 Laplace Transform

$\frac{1}{(s-a)(s-b)}$:

$\frac{1}{(s-a)^3}$:

$\frac{1}{(s-a)^2 + b^2}$:

Convolution:

First shift:

Second shift:

5 Areas

Polar Equation:

Volume of Solid:

Area of Polar Equation:

6   ODE

1. Solve the following ODE using D-operator.

$$y'' + 2y' + y = e^{-x}$$

2. Solve the following Cauchy-Euler equation:

$$x^2 y'' + 3xy' + 6y = 0$$

3. Find the Laplace Transform of

$$t \sin bt$$