

## Formulae Test

$$\sin^2 x + \cos^2 x = 1$$

$$1 + \cot^2 x = \operatorname{cosec}^2 x$$

$$\frac{d}{dx}(\sin x) = \cos x$$

$$\frac{d}{dx}(\tan x) = \sec^2 x$$

$$\frac{d}{dx}(\sec x) = \sec x \tan x$$

$$\frac{d}{dx}(e^x) = e^x$$

$$\frac{d}{dx}(\ln x) = \frac{1}{x}$$

$$\sin 2A = 2 \sin A \cos A$$

$$\cos 2A = 2 \cos^2 A - 1$$

$$\tan 2A = \frac{2 \tan A}{1 - \tan^2 A}$$

$$1 + \tan^2 x = \sec^2 x$$

$$\frac{d}{dx}(\cos x) = -\sin x$$

$$\frac{d}{dx}(\cot x) = -\operatorname{cosec}^2 x$$

$$\frac{d}{dx}(\operatorname{cosec} x) = -\operatorname{cosec} x \cot x$$

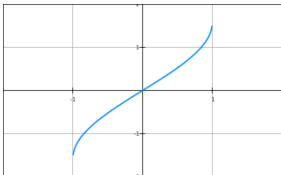
$$\frac{d}{dx}(f(x)g(x)) = f'(x)g(x) + f(x)g'(x)$$

$$\frac{d}{dx}(a^x) = a^x \ln a$$

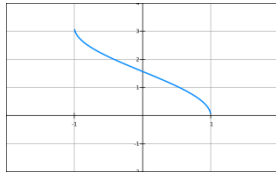
$$\cos 2A = \cos^2 A - \sin^2 A$$

$$\cos 2A = 1 - 2 \sin^2 A$$

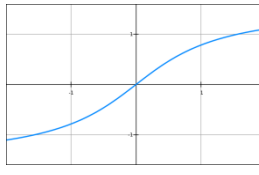
$y = \arcsin x$ ,



$y = \arccos x$



$y = \arctan x$



$$\int u \frac{dv}{dx} dx = uv - \int v \frac{du}{dx} dx$$

$$\int \cos^2 x \, dx = \frac{1}{2}x + \frac{1}{4}\sin 2x + c$$

$$\int \ln x \, dx = x \ln x - x$$

$$\int \frac{1}{x} \, dx = \ln |x| + c$$

$$\int \sin^2 x \, dx = \frac{1}{2}x - \frac{1}{4}\sin 2x + c$$

$$\int \frac{f'(x)}{f(x)} \, dx = \ln |f(x)| + c$$

$$\int \frac{1}{x^2} \, dx = -\frac{1}{x} + c + c$$

The dot product of two vectors  $\mathbf{a}$  and  $\mathbf{b}$  is  $\mathbf{a} \cdot \mathbf{b} = |\mathbf{a}| |\mathbf{b}| \cos \theta$ , where  $\theta$  is the angle between the lines. If two lines are perpendicular, their dot product is zero.

Volume Of Solid Of Revolution,  $V = \int \pi y^2 dx$

Area Under a Curve,  $A = \int y \, dx$

## MECHANICS

Work done =  $Fd$

Kinetic Energy =  $\frac{1}{2}mv^2$

Potential Energy =  $mgh$

Power =  $Fv$

# Formulae Test

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

$$1 + \cot^2 x =$$

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

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

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

$$\frac{d}{dx}(e^x) =$$

$$\frac{d}{dx}(\ln x) =$$

$$\sin 2A =$$

$$\cos 2A =$$

$$\tan 2A =$$

$$1 + \tan^2 x =$$

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

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

$$\frac{d}{dx}(\operatorname{cosec} x) =$$

$$\frac{d}{dx}(f(x)g(x)) =$$

$$\frac{d}{dx}(a^x) =$$

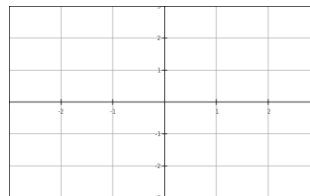
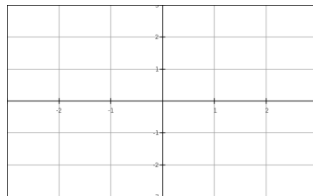
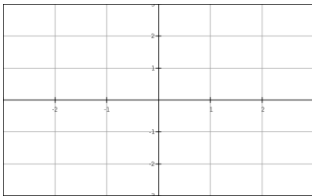
$$\cos 2A =$$

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$$y = \arcsin x,$$

$$y = \arccos x$$

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$$\int u \frac{dv}{dx} dx =$$

$$\int \cos^2 x dx =$$

$$\int \ln x dx =$$

$$\int \frac{1}{x} dx =$$

$$\mathbf{a \cdot b} =$$

$$\int \sin^2 x dx =$$

$$\int \frac{f'(x)}{f(x)} dx =$$

$$\int \frac{1}{x^2} dx =$$

Volume Of Solid Of Revolution,  $V =$

Area Under a Curve,  $A =$

# Mechanics

Work done =

Kinetic Energy =

Potential Energy =

Power =