

MATH 6 – FORMULAS TO KNOW FOR THE FINAL

1 Trig Identities

1.1 Basic Identities

Write $\tan$, $\sec$, $\cot$ and $\csc$ in terms of $\sin$ and $\cos$.

1. $\tan x =$

2. $\sec x =$

3. $\cot x =$

4. $\csc x =$

Write the three Pythagorean identities.

1. $\sin^2 x + \underline{\hspace{2cm}} = \underline{\hspace{2cm}}$

2. $\tan^2 x + \underline{\hspace{2cm}} = \underline{\hspace{2cm}}$

3. $\cot^2 x + \underline{\hspace{2cm}} = \underline{\hspace{2cm}}$

1.2 Sum and Difference Formulas

1. $\sin(u + v) =$

2. $\cos(u + v) =$

3. $\sin(u - v) =$

4. $\cos(u - v) =$

1.3 Double Angle Formulas

1. $\sin 2u =$

2. $\cos 2u =$

1.4 Power Reducing Formulas

1. $\sin^2 u =$

2. $\cos^2 u =$

1.5 Half-angle Formulas

1. $\sin \frac{u}{2} =$

2. $\cos \frac{u}{2} =$

2 Derivatives

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

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

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

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

3 Integrals

1. $\int x^n dx =$ (when $n \neq -1$)

2. $\int e^x dx =$

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

4. $\int \sin x dx =$

5. $\int \cos x dx =$

6. $\int \sec^2 x dx =$

7. $\int \sec x \tan x dx =$