CALCULUS
FLASH CARDS

Trigonometry

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for my Calc students

Instructions for Using the Flash Cards:

1. Cut along the horizontal lines only.

2. Fold along the vertical lines. This will result in a "flash card" with the term on one side and the definition or equivalent expression on the other. You may choose to tape or glue this paper card to a 3 x 5 card.

3. Use the flash cards at least 10 minutes a day. If you know the definition or formula, put it away for this session. If you don't know it, put it at the back of the stack and do it again.

4. Work alone or with a helper - another calc student would be best, but not necessary.

5. You may work at school, at home, on the bus or train, or any place where you can pull the cards out. Every time you use them you will be working towards a good grade on the Calc exam.

Right Triangle: **sin θ**	$\frac{\text{opp}}{\text{hyp}}$
Right Triangle: **cos θ**	$\frac{\text{adj}}{\text{hyp}}$
Right Triangle: **tan θ**	$\frac{\text{opp}}{\text{adj}}$
Circular function, radius r **sin θ**	$\frac{y}{r}$
Circular function, radius r **cos θ**	$\frac{x}{r}$

Circular function, radius r **tan θ**	$\frac{y}{x}$
Reciprocal Identity: **csc θ**	$\frac{1}{\sin \theta}$
Reciprocal Identity: **sec θ**	$\frac{1}{\cos \theta}$
Reciprocal Identity: **cot θ**	$\frac{1}{\tan \theta}$
Reciprocal Identity: **1**	**sin x csc x** **or** **cos x sec x** **or** **tan x cot x**

Pythagorean Identities: **1**	$\sin^2 x + \cos^2 x =$
Pythagorean Identities: $\sec^2 x$	$1 + \tan^2 x =$
Pythagorean Identities: $\csc^2 x$	$1 + \cot^2 x =$
Cofunction Identities $\sin(\pi/2 - x)$	$\cos x$
Cofunction Identities $\cos(\pi/2 - x)$	$\sin x$

Cofunction Identities **$\tan\left(\frac{\pi}{2} - x\right)$**	**$\cot x$**
Cofunctions of **Complementary Angles**	**are equal.**
Sum/Difference Formulas: **$\sin(u \pm v) =$**	**$\sin u \cos v \pm \cos u \sin v$**
Sum/Difference Formulas: **$\cos(u \pm v) =$**	**$\cos u \cos v \mp \sin u \sin v$**
Sum/Difference Formulas: **$\tan(u \pm v) =$**	**$\frac{\tan u \pm \tan v}{1 \mp \tan u \tan v}$**

Double angle Formula **sin 2*u***	**2 sin *u* cos *u***
Double angle Formula **cos 2*u***	**cos ^{2} *u* - sin ^{2} *u*** **2 cos ^{2} *u* - *1*** ***1* - *2* sin ^{2} *u***
Double angle Formula **tan 2*u***	$$\frac{2 \tan u}{1 - \tan^2 u}$$
Power Reducing Formulas **sin ^{2} *u***	$$\frac{1 - \cos 2u}{2}$$
Power Reducing Formulas **cos ^{2} *u***	$$\frac{1 + \cos 2u}{2}$$

Power Reducing Formulas $\tan^2 u$	$\frac{1 - \cos 2u}{1 + \cos 2u}$
Product-to-Sum: $\sin u \sin v$	$\frac{1}{2}\ [\cos(u-v) - \cos(u+v)]$
Product-to-Sum: $\cos u \cos v$	$\frac{1}{2}\ [\cos(u-v) + \cos(u+v)]$
Product-to-Sum: $\sin u \cos v$	$\frac{1}{2}\ [\sin(u+v) + \sin(u-v)]$
Product-to-Sum: $\cos u \sin v$	$\frac{1}{2}\ [\sin(u+v) - \sin(u-v)]$