4-16-18

$\tan\theta = \frac{\sin\theta}{\cos\theta}$ $\quad 1-\sin^2\theta = \cos^2\theta$

$\cot\theta = \frac{\cos\theta}{\sin\theta}$ $\quad 1-\cos^2\theta = \sin^2\theta$

$\csc\theta = \frac{1}{\sin\theta}$ $\quad \cos^2\theta+\sin^2\theta = 1$

$\sec\theta = \frac{1}{\cos\theta}$

① $(1-\cos\theta)(1+\cos\theta)$

$1+\cos\theta-\cos\theta-\cos^2\theta$

$1-\cos^2\theta$

$\sin^2\theta$

② $\frac{\tan x \cdot \cos x}{\sin x}$

$\frac{\frac{\sin x}{\cancel{\cos x}_1}\cdot\frac{\cancel{\cos x}^1}{1}}{\sin x}$

$\frac{\sin x}{\sin x} = 1$

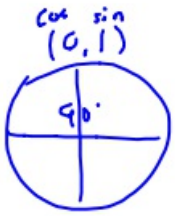
② $\tan x \cdot \cos x \cdot \csc x$

$\frac{\cancel{\sin x}^1}{\cancel{\cos x}_1}\cdot\frac{\cancel{\cos x}^1}{1}\cdot\frac{1}{\cancel{\sin x}^1}$

1

(4) $\cos(\underset{\alpha}{90^\circ} + \underset{B}{\theta})$

$\cos(\alpha \pm B) = \cos\alpha \cdot \cos B \mp \sin\alpha \cdot \sin B$



$\cos 90^\circ \cdot \cos\theta - \sin 90^\circ \cdot \sin\theta$

$0 \cdot \cos\theta - 1 \cdot \sin\theta$

$0 - \sin\theta$

$-\sin\theta$

(5) $\sin x \cdot \tan x \cdot \cos x$

$$\frac{\sin x}{1} \cdot \frac{\sin x}{\cos x} \cdot \frac{\cos x}{1}$$

$\sin^2 x$

(6) $$\frac{\csc\theta \cdot \cos\theta}{\tan\theta}$$

$$\frac{\frac{1}{\sin\theta} \cdot \frac{\cos\theta}{1}}{\frac{\sin\theta}{\cos\theta}}$$

$$\frac{\frac{\cos\theta}{\sin\theta}}{\frac{\sin\theta}{\cos\theta}}$$

$$\frac{\cos\theta}{\sin\theta} \cdot \frac{\cos\theta}{\sin\theta}$$

$$\frac{\cos^2\theta}{\sin^2\theta}$$

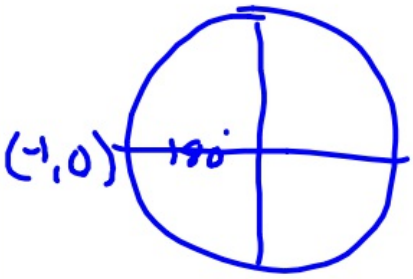
$\cot^2\theta$

⑦ $\sin(180^\circ + \theta)$

$\alpha \quad \beta$

$\sin(\alpha \pm \beta) = \sin\alpha \cdot \cos\beta \pm \sin\beta \cdot \cos\alpha$

$= \sin 180^\circ \cdot \cos\theta + \sin\theta \cdot \cos 180^\circ$



$0 \cdot \cos\theta + \sin\theta \cdot -1$

$0 - \sin\theta$

$-\sin\theta$

⑧ $\sin\theta \cdot \sec^2\theta \cdot \cos\theta$

$\frac{\sin\theta}{1} \cdot \frac{1}{\cos^2\theta} \cdot \frac{1}{\cos\theta}$

$\frac{\sin\theta}{\cos\theta}$

$\tan\theta$

4-16-18 3rd Trig

$\tan\theta = \frac{\sin\theta}{\cos\theta}$

$\cot\theta = \frac{\cos\theta}{\sin\theta}$

$\csc\theta = \frac{1}{\sin\theta}$

$\sec\theta = \frac{1}{\cos\theta}$

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

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

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

① $\tan\theta \cdot \cos\theta \cdot \csc\theta$

$\frac{\sin\theta}{\cos\theta} \cdot \frac{\cos\theta}{1} \cdot \frac{1}{\sin\theta}$

1

② $\frac{\tan x \cdot \cos x}{\sin x}$

$\frac{\frac{\sin x}{\cos x} \cdot \frac{\cos x}{1} = \frac{\sin x}{1}}{\sin x}$

$\frac{\sin x}{\sin x}$

1

(3) $\sin\theta \cdot \tan\theta \cdot \sec\theta$

$$\frac{\sin\theta}{1} \cdot \frac{\sin\theta}{\cos\theta} \cdot \frac{1}{\cos\theta}$$

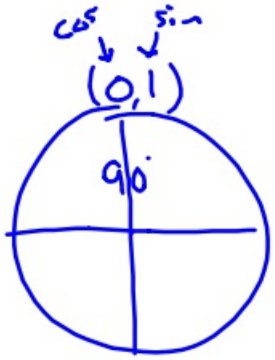
$$\frac{\sin^2\theta}{\cos^2\theta}$$

$$\tan^2\theta$$

(4) $\cos(90^\circ - \theta)$

α β

$\cos(\alpha \pm \beta) = \cos\alpha \cdot \cos\beta \mp \sin\alpha \cdot \sin\beta$



$= \cos 90^\circ \cdot \cos\theta + \sin 90^\circ \cdot \sin\theta$

$0 \cdot \cos\theta + 1 \cdot \sin\theta$

$0 + \sin\theta$

$\sin\theta$

(5) $\sin\theta \cdot \sec^2\theta \cdot \cos\theta$

$$\frac{\sin\theta}{1} \cdot \frac{1}{\cos^2\theta} \cdot \frac{\cos\theta}{1}$$

$$\frac{\sin\theta}{\cos\theta}$$

$$\tan\theta$$

⑥ $\sin(180^\circ + \theta)$

α β

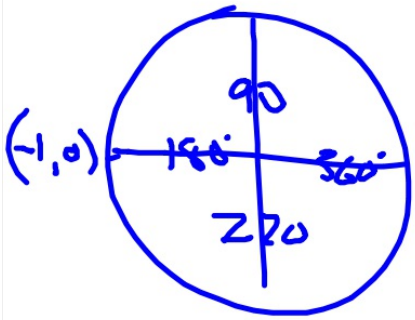
$\sin(\alpha \pm \beta) = \sin\alpha \cdot \cos\beta \pm \sin\beta \cdot \cos\alpha$

$\sin 180^\circ \cdot \cos\theta + \sin\theta \cdot \cos 180^\circ$

$0 \cdot \cos\theta + \sin\theta \cdot -1$

$0 - \sin\theta$

$-\sin\theta$



(7) $\dfrac{\tan\theta}{\cot\theta}$

$$\frac{\frac{\sin\theta}{\cos\theta}}{\frac{\cos\theta}{\sin\theta}}$$

$$\frac{\sin\theta}{\cos\theta} \cdot \frac{\sin\theta}{\cos\theta} = \frac{\sin^2\theta}{\cos^2\theta}$$

$$\tan^2\theta$$

4-16-18 4th Try

$\tan\theta = \frac{\sin\theta}{\cos\theta}$ $\quad \cot\theta = \frac{\cos\theta}{\sin\theta}$

$\csc\theta = \frac{1}{\sin\theta}$ $\quad \sec\theta = \frac{1}{\cos\theta}$

$$\cos^2\theta + \sin^2\theta = 1$$
$$\cos^2\theta = 1 - \sin^2\theta$$
$$\sin^2\theta = 1 - \cos^2\theta$$

① $\csc\theta \cdot \tan\theta \cdot \cos\theta$

$\frac{1}{\sin\theta} \cdot \frac{\sin\theta}{\cos\theta} \cdot \frac{\cos\theta}{1}$

$\frac{1}{1}$

1

② $\tan x \cdot \sin x \cdot \cos x$

$\frac{\sin x}{\cos x} \cdot \frac{\sin x}{1} \cdot \frac{\cos x}{1}$

$\sin^2 x$

(3) $\cos(180^\circ + \theta)$

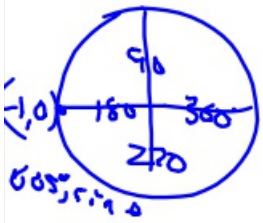
α $\quad$ β

$\cos(\alpha \pm \beta) = \cos\alpha \cdot \cos\beta \mp \sin\alpha \cdot \sin\beta$

$= \cos 180 \cdot \cos\theta - \sin 180 \cdot \sin\theta$

$-1 \cdot \cos\theta - 0 \cdot \sin\theta$

$-\cos\theta$



(4) $\dfrac{\csc\theta \cdot \cos\theta}{\tan\theta}$

$\dfrac{\frac{1}{\sin\theta} \cdot \frac{\cos\theta}{1}}{\frac{\sin\theta}{\cos\theta}}$

$\dfrac{\frac{\cos\theta}{\sin\theta}}{\frac{\sin\theta}{\cos\theta}}$

$\dfrac{\cos\theta}{\sin\theta} \cdot \dfrac{\cos\theta}{\sin\theta}$

$\dfrac{\cos^2\theta}{\sin^2\theta}$

$\cot^2\theta$

(5) $\sec^2 x \cdot \sin^2 x \cdot \csc x \cdot \cos x$

$$\frac{1}{\cos^2 x} \cdot \frac{\sin^2 x}{1} \cdot \frac{1}{\sin x} \cdot \frac{\cos x}{1}$$

$$\frac{\sin x}{\cos x}$$

$$\tan x$$

(6) $$\frac{\csc x \cdot \tan x}{\sec x}$$

$$\frac{\frac{1}{\sin x} \cdot \frac{\sin x}{\cos x}}{\frac{1}{\cos x}}$$

$$\frac{\frac{1}{\cos x}}{\frac{1}{\cos x}} = 1$$

(7) $(1 - \cos x)(1 + \cos x)$

$$1 + \cos x - \cos x - \cos^2 x$$

$$1 - \cos^2 x$$

$$\sin^2 x$$