

College Trigonometry**Name:****Review for Test 3****Date:**

1) For the following trigonometric functions state the amplitude (if applicable), period, phase shift (if any), and the range

a) $y = 2 \sin 6x$

b) $y = -2 \sin(\pi x + \frac{\pi}{4})$

c) $y = 2 - 3 \sin \frac{x}{2}$

d) $y = 2 \tan(2\pi x - \frac{\pi}{2})$

2) Use the **fundamental identities** to find the exact values of the remaining trigonometric functions of x , given the following

a) $\tan x = 2$ and $\sin x = \frac{-2}{\sqrt{5}}$

b) $\cot x = -3$ and $\cos x > 0$

c) $\sin x = \frac{-3}{5}$ and $\cot x = \frac{4}{3}$

d) $\csc x = \frac{3}{2}$ and $\tan x < 0$

3) Verify each identity

a) $\frac{\cos^2 x - \sin^2 x}{\sin x \cos x} = \cot x - \tan x$

b) $(\sec x - 1)(\sec x + 1) = \tan^2 x$

c) $\frac{\cos x}{1 - \sin x} - \tan x = \sec x$

d) $\frac{1 - \tan^2 x}{1 - \cot^2 x} = 1 - \sec^2 x$

e) $\frac{\cot x}{\csc x + 1} = \frac{\csc x - 1}{\cot x}$

f) $\frac{\sin^2 x + 4 \sin x + 3}{\cos^2 x} = \frac{3 + \sin x}{1 - \sin x}$

4) For the following trigonometric functions:

a) State the amplitude (if applicable), range, period, phase shift (if any)

b) Sketch the graph in the given interval. (Sketch a reasonable graph!!!!)

1) $y = \cos 4x$ in the interval $-\frac{\pi}{2} \leq x \leq \frac{\pi}{2}$ (scale: x-axis :2 unit = $\frac{\pi}{8}$,
y-axis : 4 units = 1)

2) $y = 4 \cos\left(2x + \frac{\pi}{4}\right)$ in the interval $-\pi \leq x \leq 3\pi$.

(scale: x-axis :1 unit = $\frac{\pi}{4}$, y-axis : 1 units = 1)