

1. Find all values of x for which $\csc(x)$ is undefined.
- $\frac{k\pi}{2}$
 - $\frac{\pi}{2} + k\pi$
 - $-\frac{\pi}{2} + 2k\pi$
 - $\frac{\pi}{2} + 2k\pi$
 - $k\pi$
2. Find the period of the function $y = \cos\left(\frac{x}{5}\right)$.
- 5π
 - 10π
 - 2π
 - $\frac{1}{5}$
 - 5
3. Identify the amplitude and phase shift for the equation $y = 2 \sin\left(2x + \frac{\pi}{2}\right)$.
- Amplitude = 2 and Phase shift = $-\frac{\pi}{4}$
 - Amplitude = 1 and Phase shift = $-\frac{\pi}{4}$
 - Amplitude = 4 and Phase shift = $\frac{\pi}{2}$
 - Amplitude = 2 and Phase shift = $\frac{\pi}{4}$
 - Amplitude = 1 and Phase shift = $\frac{\pi}{4}$
4. The graph below is one complete cycle of the graph of an equation containing a trigonometric function. Find an equation to match the graph.
- $y = -3 + 3 \sin \pi x$
 - $y = 4 + 5 \sin \pi x$
 - $y = 5 \sin \pi x$
 - $y = 2 - 4 \sin \pi x$
 - $y = -4 - 5 \sin \pi x$
5. Evaluate $\sin^{-1}\left(-\frac{\sqrt{3}}{2}\right)$.
- $-\frac{\pi}{3}$
 - $\frac{\pi}{2}$
 - $\frac{\pi}{6}$
 - $-\frac{\pi}{6}$
 - $\frac{\pi}{3}$
6. Evaluate $\cot\left(\tan^{-1}\frac{1}{4}\right)$.
- $\frac{1}{4}$
 - -4
 - 4
 - $\sqrt{4}$
 - $-\sqrt{4}$

7. Find the identical expression for $(\sec x + \cot x) \sin x$.

- a) $\tan x$
- b) $\sec x$
- c) $\tan x + \cos x$
- d) $\cos x$
- e) $\cot x + \sin x$

8. Simplify $\frac{\sin x}{1 + \cos x} + \frac{1 + \cos x}{\sin x}$.

- a) $2 \sec^2 x$
- b) $2 \cos x$
- c) $2 \sec x$
- d) $2 \csc x$
- e) $2 \csc^2 x$

9. Find the identical expression for $\cos\left(x - \frac{\pi}{2}\right)$.

- a) $-\sin x$
- b) $\sin x$
- c) $\tan x$
- d) $-\cos x$
- e) $\cos x$

10. Write the expression $\cos 7x \cos 3x - \sin 7x \sin 3x$ as a single trigonometric function.

- a) $\cos 10x$
- b) $\cos 13x$
- c) $\cos 14x$
- d) $\cos 12x$
- e) $\cos 11x$

11. If $\sin A = \frac{1}{\sqrt{5}}$ with A in quadrant II, find $\cos 2A$.

- a) $-\frac{3}{5}$
- b) $-\frac{3}{10}$
- c) $-\frac{1}{5}$
- d) $\frac{1}{5}$
- e) $\frac{3}{5}$

12. If $\tan A = \sqrt{13}$, find $\tan 2A$.

- a) $-\frac{\sqrt{13}}{6}$
- b) $\frac{\sqrt{13}}{6}$
- c) $2\sqrt{13}$
- d) $\frac{\sqrt{13}}{4}$
- e) $-2\sqrt{13}$

13. If $\sin A = \frac{4}{5}$ with A in the second quadrant, and $\sin B = \frac{3}{5}$ with B in the first quadrant, find $\cos(A + B)$.

- a) $\frac{\sqrt{2}}{5}$
- b) $-\frac{24}{25}$
- c) $-\frac{\sqrt{2}}{5}$
- d) $-\frac{1}{5}$
- e) $\frac{1}{5}$

14. Use half-angle formulas to find the exact value for $\cos 105^\circ$.

- a) $\frac{\sqrt{1 + \sqrt{2}}}{2}$
- b) $-\frac{\sqrt{2 - \sqrt{3}}}{2}$
- c) $\frac{1}{2}$
- d) $-\frac{1}{2}$
- e) $-\frac{\sqrt{2 + \sqrt{3}}}{2}$

15. Evaluate $\tan(\sin^{-1} 8x)$.

- a) $\frac{\sqrt{64x^2 - 1}}{8x}$
- b) $\frac{\sqrt{1 - 64x^2}}{8x}$
- c) $\frac{8}{x\sqrt{1 - 64x^2}}$
- d) $\frac{8x}{\sqrt{1 - 64x^2}}$
- e) $\frac{8x}{\sqrt{64x^2 - 1}}$

16. Rewrite the expression $\sin 15x + \sin x$ as a product.

- a) $2 \sin 7x \cos 7x$
- b) $2 \sin 6x \cos 7x$
- c) $2 \sin 8x \cos 7x$
- d) $2 \cos 6x \sin 7x$
- e) $2 \sin 7x \sin 7x$

17. Solve the equation $5 \cos t + 1 = 3 \cos t$ for t if $0 \leq t < 2\pi$.

- a) $\frac{\pi}{4}, \frac{3\pi}{4}$
- b) $\frac{\pi}{6}, \frac{5\pi}{6}$
- c) $\frac{2\pi}{3}, \frac{4\pi}{3}$
- d) $\frac{7\pi}{6}, \frac{11\pi}{6}$
- e) $\frac{3\pi}{4}, \frac{5\pi}{4}$

18. Solve $\cos x - 2 \sin x \cos x = 0$ for x if $0 \leq x < 2\pi$.

- a) $\frac{\pi}{2}, \frac{3\pi}{2}, \frac{\pi}{6}, \frac{5\pi}{6}$
- b) $0, \pi, \frac{\pi}{3}, \frac{5\pi}{3}$
- c) $0, \pi, \frac{2\pi}{3}, \frac{4\pi}{3}$
- d) $0, \pi, \frac{\pi}{6}, \frac{5\pi}{6}$
- e) $\frac{\pi}{2}, \frac{3\pi}{2}, \frac{\pi}{3}, \frac{5\pi}{3}$

19. Solve the equation $\csc \theta + 2 \cot \theta = 0$ for θ if $0^\circ \leq \theta < 360^\circ$.

- a) $30^\circ, 330^\circ$
- b) $30^\circ, 150^\circ$
- c) $45^\circ, 135^\circ$
- d) $120^\circ, 240^\circ$
- e) $225^\circ, 315^\circ$

20. Solve the equation $2 \cos^2 x + \sin x - 1 = 0$ for x if $0 \leq x < 2\pi$.

- a) $\frac{\pi}{6}, \frac{\pi}{2}, \frac{5\pi}{6}$
- b) $\frac{\pi}{6}, \frac{5\pi}{6}, \frac{3\pi}{2}$
- c) $\frac{\pi}{2}, \frac{7\pi}{6}, \frac{11\pi}{6}$
- d) $\frac{\pi}{3}, \pi, \frac{5\pi}{3}$
- e) $0, \frac{2\pi}{3}, \frac{4\pi}{3}$

FALL 06 MATH 026 EXAM 2

ITEM NO.	FORM:	A
1		E
2		B
3		A
4		D
5		A
6		C
7		C
8		D
9		B
10		A
11		E
12		A
13		B
14		B
15		D
16		C
17		C
18		A
19		D
20		C