

**CHAPTER 5, FORM A
TRIGONOMETRY**

NAME _____
DATE _____

1. Given $\cos x = \frac{4}{5}$, with x in quadrant IV,
find the remaining five trigonometric
functions of x .

1. _____

Given $\tan x = \sqrt{3}$, where $0^\circ < x < 90^\circ$. Find each of the following.

2. $\sin x$
3. $\cos x$

2. _____
3. _____

Let $\sin s = \frac{1}{3}$, with s in quadrant II and let $\cos t = \frac{3}{4}$, with t in quadrant I.

Find each of the following.

4. $\cos (s + t)$
5. $\sin (s - t)$
6. $\cos 2s$
7. $\sin \frac{t}{2}$

4. _____
5. _____
6. _____
7. _____

Suppose $x = \frac{\pi}{12}$. Use the indicated identity to find the exact value of each
of the following.

8. $\sin x$, difference identity
9. $\cos x$, half-angle identity

8. _____
9. _____

Answer *true* or *false* for each of the following.

10. $\sin 88^\circ = 2 \sin 44^\circ \cos 44^\circ$
11. $\sec (-82^\circ) = -\sec 82^\circ$
12. $\cos 62^\circ = \cos 29^\circ \cos 33^\circ + \sin 29^\circ \cos 33^\circ$
13. $\cos 64^\circ = 2 \cos 34^\circ \sin 34^\circ$
14. Explain how to derive a formula for
 $\sin (A - B + C)$.

10. _____
11. _____
12. _____
13. _____
14. _____

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Use identities to express each of the following in terms of $\sin \theta$ and $\cos \theta$ and simplify.

15. $\sec \theta \cot \theta$

15. _____

16. $\frac{1 + \cot^2 \theta}{\csc^2 \theta}$

16. _____

Verify that the equation is an identity.

17. $\frac{1}{\tan \gamma + \cot \gamma} = \sin \gamma \cos \gamma$

17. _____

18. $\frac{2}{1 - \cos \gamma} = 1 + \cot^2 \frac{\gamma}{2}$

18. _____

19. $2 \cot \theta = \csc^2 \theta \sin 2\theta$

19. _____

20. $2 \tan x \sec x \csc x = 2 + 2 \tan^2 x$

20. _____

**CHAPTER 5, FORM B
TRIGONOMETRY**

NAME _____
DATE _____

1. Given $\cos x = -\frac{3}{4}$, with x in quadrant II,
find the remaining five trigonometric
functions of x .

1. _____

Given $\sin x = -\frac{1}{2}$, where $180^\circ < x < 270^\circ$. Find each of the following.

2. $\tan x$
3. $\sec x$

2. _____
3. _____

Let $\sin s = -\frac{2}{3}$, with s in quadrant III and let $\cos t = -\frac{1}{3}$, with t in quadrant

II. Find each of the following.

4. $\cos (s - t)$
5. $\sin (s + t)$
6. $\sin 2s$
7. $\tan \frac{t}{2}$

4. _____
5. _____
6. _____
7. _____

Suppose $x = \frac{5\pi}{12}$. Use the indicated identity to find the exact value of each
of the following.

8. $\sin x$, sum identity
9. $\cos x$, half-angle identity

8. _____
9. _____

Answer *true* or *false* for each of the following.

10. $\sin 38^\circ = 2 \sin 76^\circ \cos 76^\circ$
11. $\cos (-12^\circ) = -\cos 12^\circ$
12. $\cos 84^\circ = \cos 51^\circ \cos 33^\circ - \sin 51^\circ \sin 33^\circ$
13. $\sin 38^\circ + 2 \sin^2 19^\circ = 1$
14. Explain how to derive a formula for
 $\sin (A - B + C)$.

10. _____
11. _____
12. _____
13. _____
14. _____

CHAPTER 5, FORM B, PAGE 2

Use identities to express each of the following in terms of $\sin \theta$ and $\cos \theta$, and simplify.

15. $\tan \theta \csc \theta$

15. _____

16. $\frac{\csc^2 \theta - 1}{\cot^2 \theta}$

16. _____

Verify that the equation is an identity.

17. $\frac{\sec^2 \beta}{\tan \beta} = \frac{\cot^2 \beta - \tan^2 \beta}{\cot \beta - \tan \beta}$

17. _____

18. $1 - \cos x = \frac{2}{\csc^2 \frac{x}{2}}$

18. _____

19. $\sin 2\beta = 2 \sin^3 \beta \cos \beta + 2 \sin \beta \cos^3 \beta$

19. _____

20. $2 \tan \alpha \sin \alpha \sec \alpha = 2 \sec^2 \alpha - 2$

20. _____