CHAPTER 6, FORM A
TRIGONOMETRY

NAME _____
DATE _____

Do not use a calculator for this test except where indicated.

1. State the domain and range of $\sin^{-1} x$.

1. D: _____
R: _____

For Problems 2-3, give the exact real number value of y. For Problem 4, use a calculator to give an approximate value to the nearest hundredth.

2. $y = \csc^{-1}\left(-\sqrt{2}\right)$ **2.** _____

3. $y = \operatorname{arccot}\left(-\frac{\sqrt{3}}{3}\right)$ **3.** _____

4. $y = \operatorname{arcsec}(-1.5)$ **4.** _____

Find each of the following.

5. $\tan\left(\arccos\frac{3}{4}\right)$ **5.** _____

6. $\sin^{-1}\left(\tan\frac{\pi}{4}\right)$ **6.** _____

7. $\sin\left[\arccos\frac{1}{3} + \arcsin\left(-\frac{2}{5}\right)\right]$ **7.** _____

8. $\csc^{-1}\left(\csc\frac{5\pi}{4}\right) \neq \frac{5\pi}{4}$. Explain. **8.** _____

Solve the equation for solutions in the interval [0°, 360°). Use a calculator for Problem 12; give the answer to the nearest hundredth of a degree.

9. $\cos^3\theta = \cos\theta$ **9.** _____

10. $\tan\theta = 2\sin\theta$ **10.** _____

11. $2\cos\theta + \sqrt{2} = 0$ **11.** _____

12. $6\sin\theta + 2 = 0$ **12.** _____

Solve the equation for solutions in the interval $[0, 2\pi)$. Use a calculator for Problem 16; give the answer to three decimal places.

13. $2\cos^2 x + 1 = 3\cos x$ **13.** _____

14. $\cos 2x = \sin x$ **14.** _____

15. $\sin\frac{1}{2}x = \cos x$ **15.** _____

16. $\sin 2x = \frac{1}{4}$ **16.** _____

Solve the equation for x.

17. $y = 2 \sin 3x$ **17.** _____

18. $5y = 4 \tan x + 1$ **18.** _____

Solve the equation.

19. $\tan^{-1} 3x = -\frac{\pi}{4}$ **19.** _____

20. $\arccos x - \operatorname{arccot} \frac{6}{5} = 0$ **20.** _____

CHAPTER 6, FORM B
TRIGONOMETRY

NAME _____
DATE _____

Do not use a calculator for this test except where indicated.

1. State the domain and range of $\cos^{-1} x$.

1. D: _____
R: _____

For Problems 2-3, give the exact real number value of y. For Problem 4, use a calculator to give an approximate value to the nearest hundredth.

2. $y = \cos^{-1} 0$

2. _____

3. $y = \sin^{-1}\left(\frac{1}{2}\right)$

3. _____

4. $y = \sec^{-1}(-3)$

4. _____

Find each of the following.

5. $\csc\left(\arcsin\frac{9}{15}\right)$

5. _____

6. $\cos^{-1}\left[\tan\left(\frac{\pi}{4}\right)\right]$

6. _____

7. $\sin\left[\arccos\left(-\frac{2}{3}\right) + \arcsin\frac{1}{4}\right]$

7. _____

8. $\sec^{-1}\left[\sec\left(-\frac{\pi}{3}\right)\right] \neq -\frac{\pi}{3}$. Explain.

8. _____

Solve the equation for solutions in the interval [0°, 360°). Use a calculator for Problem 12; give the answer to the nearest hundredth of a degree.

9. $\sqrt{3}\tan\theta = 2\sin\theta$

9. _____

10. $2\cos\theta + \sqrt{3} = 0$

10. _____

11. $\sec^2\theta + 2\sec\theta = 0$

11. _____

12. $\sin^2\theta = \frac{1}{3}$

12. _____

Solve the equation for solutions in the interval $[0, 2\pi)$. Use a calculator for Problem 16; give the answer to three decimal places.

13. $2\sin^2 x - \sin x = 1$ **13.** _____

14. $3\tan 2x = 0$ **14.** _____

15. $\sin\frac{x}{2} = 1 - \sin\frac{x}{2}$ **15.** _____

16. $\cos 2x = \frac{3}{4}$ **16.** _____

Solve the equation for x.

17. $y = 3\cos 2x$ **17.** _____

18. $3y = 5\sin(x - 4)$ **18.** _____

Solve the equation.

19. $\sin^{-1} 2x = \frac{\pi}{4}$ **19.** _____

20. $\arctan x = \arccos\frac{5}{13}$ **20.** _____

CHAPTER 6, FORM C
TRIGONOMETRY

NAME _____
DATE _____

Do not use a calculator for this test except where indicated.

1. State the domain and range of $\tan^{-1} x$.

1. D: _____
R: _____

For Problems 2-3, give the exact real number value of y. For Problem 4, use a calculator to give an approximate value to the nearest hundredth.

2. $y = \tan^{-1}(-1)$ **2.** _____

3. $y = \sec^{-1}(-2)$ **3.** _____

4. $y = \arccos(-0.8)$ **4.** _____

Find each of the following.

5. $\tan\left(\arcsin\frac{1}{3}\right)$ **5.** _____

6. $\cos^{-1}\left(\sin\frac{\pi}{3}\right)$ **6.** _____

7. $\cos\left[\arcsin\left(-\frac{3}{4}\right)+\arccos\frac{2}{3}\right]$ **7.** _____

8. $\cos^{-1}\left[\cos\left(-\frac{\pi}{6}\right)\right] \neq -\frac{\pi}{6}$. Explain. **8.** _____

Solve the equation for solutions in the interval $[0°, 360°)$. Use a calculator for Problem 12; give the answer to the nearest hundredth of a degree.

9. $2 \sec \theta - 4 = 0$ **9.** _____

10. $2\cos\theta = \cot\theta$ **10.** _____

11. $\cot^2\theta - \cot\theta = 0$ **11.** _____

12. $3\sin^2\theta - 2 = 0$ **12.** _____

Solve the equation for solutions in the interval $[0, 2\pi)$. Use a calculator for Problem 16; give the answer to three decimal places.

13. $2\sin^2 x + 3\sin x + 1 = 0$ **13.** _____

14. $\tan\frac{x}{2} = \sin x$ **14.** _____

15. $\sin 2x = \sin x$ **15.** _____

16. $5 \sin 2x = 3$ **16.** _____

Solve the equation for x.

17. $y = -2\tan\frac{x}{3}$ **17.** _____

18. $7y = 3\cos(x + 4)$ **18.** _____

Solve the equation.

19. $\tan^{-1} 3x + \frac{\pi}{4} = 0$ **19.** _____

20. $\arcsin x = \arccos\frac{7}{25}$ **20.** _____