

Chapter 9 – 10 Review Assignment # _____

YOU MUST DO ALL YOUR WORK ON A SEPARATE PIECE OF PAPER FOR CREDIT.

For problems #1 – 5, find angles to the nearest tenth of a degree and sides rounded to 3 significant digits.

1. $A = 17^\circ$, $B = 120^\circ$, $a = 6$; find c .

2. $a = 94$, $b = 73$, $c = 52$. Find B .

3. $A = 32^\circ$, $b = 10$, $c = 15$, find B

#4 – 5 You must use right angle trig (SOH-CAH-TOA)

4. In $\triangle ABC$, $\angle A = 27^\circ$; $\angle B = 90^\circ$; $a = 12$. Find b to the nearest tenth.

5. In $\triangle ABC$, $\angle B = 90^\circ$; $b = 13$; $a = 11$. Find $\angle C$ to the nearest tenth degree.

6. Given $\triangle ABC$ with $m\angle A = 36^\circ$, $b = 15$ & $a = 10$. Solve the triangle and find the area.

7. The bearing from A to B is 220° , find the bearing from B to A .

SIMPLIFY

8. $2 \sin 5x \cos 5x$

9. $\frac{\tan 195^\circ + \tan 15^\circ}{1 - \tan 195^\circ \tan 15^\circ}$

10. $\sin 165^\circ \cos 15^\circ + \cos 165^\circ \sin 15^\circ$

11. $\cos^2 75^\circ - \sin^2 75^\circ$

12. $\cos(45^\circ - x) - \cos(45^\circ + x)$

13. $\csc(90^\circ - x)$

14. Find $\cos(\alpha + \beta)$ if $\cos \alpha = \frac{3}{5}$, α in $Q I$ and $\tan \beta = 3$, β in $Q III$.

15. Use an $\alpha \pm \beta$ expansion to find an exact value for $\cos 15^\circ$

16. Use a half angle formula to find an exact value for $\cos 15^\circ$.

17. If $\tan \theta = -\frac{3}{4}$, θ in $Q II$, find $\sin 2\theta$.

18. If $\tan \theta = -\frac{3}{4}$, θ in $Q II$, find $\sin \frac{1}{2} \theta$.

19. If $\tan \theta = -\frac{1}{3}$, find $\tan\left(\frac{5\pi}{4} - \theta\right)$

20. Solve: $\sin 2x + \cos x = 0$, $0 \leq x < 360^\circ$

21. Solve: $\cos 2x \cos x - \sin 2x \sin x = -1$, $0 \leq x < 360^\circ$

Simplify.

$$22. \frac{1}{\sin\left(\frac{\pi}{2} - x\right)}$$

$$23. (1 + \csc \theta)(1 - \csc \theta)$$

$$24. \sec x \tan(-x) \cos x$$

Solve over $0 \leq x < 2\pi$ to the nearest hundredth of a radian when necessary.

$$25. 1 + \cos 4x = 0$$

$$26. 2 \tan x \csc x + 3 \tan x = 0$$

Solve over $0 \leq x < 2\pi$. Give solutions in terms of π

$$27. \sin x \cos x = \sin x$$

$$28. \cos^2 \theta = \sin^2 \theta + 1$$

$$29. 2 \csc\left(\frac{x}{3}\right) = 5$$

$$30. \sin^2 x - \sin x = 0$$

$$31. 2 \sin 2x + 1 = 0$$

$$32. \tan^3 \theta = 3 \tan \theta$$

Answers:

1. 13.996

2. 50.6°

3. 39.1°

4. 26.432

5. 32.2°

$m\angle B_1 = 61.845^\circ, m\angle C_1 = 82.155^\circ, c_1 = 16.854$

$K_1 = 74.3 \text{ sq. units}$

6.

$m\angle B_2 = 118.155^\circ, m\angle C_2 = 25.845^\circ, c_2 = 7.417$

$K_1 = 32.7 \text{ sq. units}$

7. 040°

8. $\sin 10x$

9. $\frac{\sqrt{3}}{3}$

10. 0

11. $\frac{-\sqrt{3}}{2}$

12. $\sqrt{2} \sin x$

13. $\sec x$

14. $\frac{9\sqrt{10}}{50}$

15. $\frac{\sqrt{6} + \sqrt{2}}{4}$

16. $\frac{\sqrt{2 + \sqrt{3}}}{2}$

17. $\frac{-24}{25}$

18. $\frac{3\sqrt{10}}{10}$

19. 2

20. $90^\circ, 210^\circ, 270^\circ, 330^\circ$

21. $60^\circ, 180^\circ, 300^\circ$

22. $\sec x$

23. $-\cot^2 x$

24. $-\tan x$

25. $\frac{\pi}{4}, \frac{3\pi}{4}, \frac{5\pi}{4}, \frac{7\pi}{4}$

26. $0, \pi, 3.871, 5.553$

27. $0, \pi$

28. $0, \pi$

29. 70.8°

30. $0, \frac{\pi}{2}, \pi$

31. $\frac{7\pi}{12}, \frac{11\pi}{12}, \frac{19\pi}{12}, \frac{23\pi}{12}$

32. $0, \frac{\pi}{3}, \frac{2\pi}{3}, \pi, \frac{4\pi}{3}, \frac{5\pi}{3}$