

Ch 10 Review A worksheet

You must do your work on a separate piece of paper.

1 – 5 , angle A is acute. If $\sin A = \frac{15}{17}$, find

1. $\tan 2A$.

2. $\cos 2A$

3. $\cos \frac{A}{2}$

4. $\sin 2A$

5. $\tan \frac{A}{2}$

6. Simplify completely.

$$\cos\left(\frac{\pi}{3} + x\right) - \cos\left(\frac{\pi}{3} - x\right)$$

7. Evaluate $\tan\left(\frac{3\pi}{4} - \theta\right)$ when $\tan \theta = \frac{1}{3}$

8. Suppose that $\sin \alpha = \frac{3}{5}$ and $\sin \beta = \frac{24}{25}$, where

9. Suppose that $\sin \alpha = \frac{4}{5}$ and $\sin \beta = \frac{1}{2}$ where

$$0 < \alpha < \frac{\pi}{2} < \beta < \pi. \text{ Find } \sin(\alpha + \beta)$$

$$\frac{\pi}{2} < \alpha < \beta < \pi. \text{ Find } \cos(\alpha - \beta)$$

10. Given : $\tan \alpha = \frac{2}{3}$ and $\tan \beta = \frac{1}{2}$. Find

11. Simplify $12 \sin 4x \cos 4x$

$$\tan(\alpha + \beta)$$

12. Find the exact value of $\cos 285^\circ$ using sum/different formulas.

13. Find the exact value of $\sin 105^\circ$ using half angle formulas.

14. Find the exact value of $\sin \frac{17\pi}{12}$

15. Find the exact value of $\cos \frac{13\pi}{12}$

Given $\sin u = \frac{-5}{13}$, $\frac{3\pi}{2} < u < 2\pi$, find the exact value of the expression.

16. $\sin \frac{u}{2}$

17. $\cos \frac{u}{2}$

18. $\tan \frac{u}{2}$

19. $\sin 2u$

20. $\cos 2u$

21. $\tan 2u$

Simplify the expression

22. $\sin(x + 3\pi)$

23. $\cos(\pi - x)$

24. $\tan(x + \pi)$

25. $\frac{\sin 2x}{2 \cos x}$

26. $\tan 2x(1 + \tan x)$

Solve for $0^\circ \leq x < 360^\circ$

27. $\sin x = \sin 2x$

28. $\sin(x - 30^\circ) = 0$

29. $\cos 2x = 5 \sin^2 x - \cos^2 x$

30. $\sin 3x \cos x + \cos 3x \sin x = 0$

31. Find the two supplementary angles formed by the line $3x - y = 2$ and the line $2x + y = 3$

Answers:

1. $-240/161$
2. $-161/289$
3. $\frac{5\sqrt{34}}{34}$
4. $\frac{240}{289}$
5. $\frac{3}{5}$
6. $-\sqrt{3} \sin x$
7. -2
8. $3/5$
9. $\frac{3\sqrt{3}+4}{10}$
10. $7/4$
11. $6 \sin 8x$
12. $\frac{-\sqrt{2}+\sqrt{6}}{4}$
13. $\frac{\sqrt{2+\sqrt{3}}}{2}$
14. $\frac{-\sqrt{2}-\sqrt{6}}{4}$
15. $\frac{-\sqrt{2}-\sqrt{6}}{4}$
16. $\frac{\sqrt{26}}{26}$
17. $\frac{-5\sqrt{26}}{26}$
18. $-1/5$
19. $-120/169$
20. $119/169$
21. $-120/119$
22. $-\sin x$
23. $-\cos x$
24. $\tan x$
25. $\sin x$
26. $\frac{2 \tan x}{1 - \tan x}$
27. $0^\circ; 60^\circ; 180^\circ; 300^\circ$
28. $30^\circ; 210^\circ$
29. $30^\circ; 150^\circ; 210^\circ; 330^\circ$
30. $0^\circ, 45^\circ, 90^\circ, 135^\circ; 180^\circ; 225^\circ; 270^\circ; 315^\circ$
31. $45^\circ; 135^\circ;$