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

9. Suppose that $\sin\ \alpha=\frac{4}{5}$ and $\sin\ \beta=\frac{1}{2}$ where $\frac{\pi}{2}<\alpha<\beta<\pi$. Find $\cos(\alpha-\beta)$

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

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

12. Find the exact value of cos 285° using sum/different formulas.

13. Find the exact value of sin 105° 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 $0^\circ \le x < 360^\circ$

27. sin x = sin 2x

28. $\sin(60^\circ - x) = 2\sin x$

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

30. sin 3x cosx + 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. –sinx
23. –cosx
24. tan x
25. sinx
26. $\frac{2\tan x}{1-\tan x}$
27. 0°; 60 °; 180 °;300 °
28. 30 °; 210°
29. 30 °; 150 °; 210 °; 330 °
30. 0°, 45°, 90°, 135°; 180°; 225°; 270°; 315°
31. 45 °; 135 °;