14.6 – 14.7 Review worksheet Name _____ Assignment # _____

Do your work on a separate piece of paper for full credit.
Worksheet 14.6 – 14.7

1. If A is acute; $\sin A = \frac{15}{17}$, find $\tan 2A$.

2. If A is acute; $\tan A = \frac{5}{12}$, find $\cos 2A$

3. If $\pi < A < \frac{3\pi}{2}$; $\tan A = \frac{5}{12}$, find $\cos \frac{A}{2}$

4. If A is acute; $\cos A = ¼$, find $\sin 2A$

5. If $\frac{3\pi}{2} < A < 2\pi$; $\cos A = ¼$, find $\sin \frac{A}{2}$

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 $\sin(\alpha-\beta)$

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 $\cos 285^\circ$ 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. $\tan\left(x+\frac{\pi}{4}\right)$

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

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

27. $\left(\frac{1-\tan x}{2}\right)\tan 2x$

Answers:

1. -240/161
2. 119/169
3. $\frac{-\sqrt{26}}{26}$
4. $\frac{\sqrt{15}}{8}$
5. $\frac{\sqrt{6}}{4}$
6. $-\sqrt{3}\sin x$
7. -2
8. 3/5
9. $\frac{-4\sqrt{3}+3}{10}$
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. $\frac{\tan x+1}{1-\tan x}$
25. sinx
26. $\frac{2\tan x}{1-\tan x}$
27. $\frac{\tan x}{1+\tan x}$