

Accel Math III Practice Worksheet #1 Double and Half-Angles Name _____
Unit #6: Trig Identities

❖ Use the information given about angle θ to find the exact value of

a) $\sin 2\theta$ b) $\cos 2\theta$ c) $\tan 2\theta$

1. $\tan \theta = \frac{4}{3}, \quad \pi < \theta < \frac{3\pi}{2}$

2. $\cos \theta = \frac{-\sqrt{2}}{3}, \quad \frac{\pi}{2} < \theta < \pi$

3. $\sec \theta = 3, \quad \sin \theta > 0$

5. $\cot \theta = -2, \quad \sec \theta < 0$

6. $\csc \theta = -\sqrt{5}, \quad \cos \theta < 0$

7. $\tan \theta = 3, \quad \cos \theta < 0$

❖ Use a half-angle formula to find the exact value of each trig function.

8. $\sin 22.5^\circ$

9. $\tan \frac{7\pi}{8}$

10. $\cos 165^\circ$

11. $\sec \frac{15\pi}{8}$

12. $\sin \frac{-\pi}{8}$

❖ Find the exact value of each.

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

14. $\cos\left(2 \cos^{-1} \frac{4}{5}\right)$

15. $\tan\left(2 \cos^{-1}\left(-\frac{3}{5}\right)\right)$

16. $\cos^2\left(\frac{1}{2} \sin^{-1} \frac{3}{5}\right)$

17. $\cot^2\left(\frac{1}{2} \tan^{-1} \frac{4}{3}\right)$