# Chapter 4 Supplement

Simplify/Evaluate:

1) $1 - 2\sin^2 15°$

2) $\dfrac{\sin 4\theta}{1 - \cos 4\theta}$

3) $6\cos^2\left(\dfrac{\pi}{12}\right) - 3$

Determine the exact value of $\sin\dfrac{u}{2}$, $\cos\dfrac{u}{2}$, and $\tan\dfrac{u}{2}$.

4) $\tan u = \dfrac{3}{4}$, $\pi < u < \dfrac{3\pi}{2}$

5) $\sin u = -\dfrac{5}{13}$, $\dfrac{3\pi}{2} < u < 2\pi$

Determine the exact value of the sine, cosine and tangent of the given angle <u>using a half angle formula</u>.

6) $75°$

7) $\dfrac{9\pi}{8}$

Rewrite the expression without double angles, given that $0 < \theta < \dfrac{\pi}{2}$. Simplify the expression.

8) $2\csc 2\theta$

9) $\dfrac{1 + \cos 2\theta}{\cot \theta}$

10) Prove: $\tan\dfrac{\theta}{2} = \csc\theta - \cot\theta$