Name: _____ Double – Half

In problems 1 & 2, use the given information about the angle $\theta, 0 \leq \theta < 2\pi$, to find the exact value of:

a) $sin2\theta$ b) $cos2\theta$ c) $sin\frac{\theta}{2}$ d) $cos\frac{\theta}{2}$

1.) $sin\theta = \frac{3}{5}\ ,\ 0 < \theta\ < \pi/2$

2.) $cos\theta = \frac{-\sqrt{6}}{3}\ ,\ \frac{\pi}{2} < \theta\ < \pi$

In problems 3 – 8, use the half angle formulas to find the exact value of each trig function.

3.) $sin22.5°$

4.) $tan\frac{7\pi}{8}$

5.) $cos165°$

6.) $sin195°$

7.) $tan67.5°$

8.) $sin\frac{23\pi}{12}$

Prove each identity.

9.) $\cos^4\theta - \sin^4\theta = \cos(2\theta)$

10.) $tan\frac{\theta}{2} = csc\theta - cot\theta$