PRINT your name _____

Quiz for April 21, 2009 – 8:00 section

Remove everything from your desk except this page and a pencil or pen.
Circle your answer. Show your work. **Check your answer.**
The quiz is worth 5 points.

Find $\int \cos 4\theta \sqrt{2 - \sin 4\theta} d\theta$.

Answer: Let $u = 2 - \sin 4\theta$. It follows that $du = -4 \cos 4\theta d\theta$ and the problem is

$$-(1/4) \int u^{1/2} du = -(1/4)(2/3)u^{3/2} + C = \boxed{-(1/6)(2 - \sin 4\theta)^{3/2} + C.}$$

We check our answer. The derivative of the proposed answer is

$$-(3/2)(1/6)\sqrt{2 - \sin 4\theta}(-4 \cos 4\theta) = \cos 4\theta \sqrt{2 - \sin 4\theta}. \checkmark$$