PRINT Your Name:____________________

Quiz 2 — January 24, 2014 – Section 7 – 12:00 – 12:50

Remove everything from your desk except this page and a pencil or pen.
The solution will be posted soon after the quiz is given.

Circle your answer. **Show your work. Your work must be correct and coherent.**
The quiz is worth 5 points.

Find $\int \sin 8x \cos 5x \, dx$.

Answer: Add the identities

$$\sin(A+B) = \sin A \cos B + \cos B \sin A$$

$$\sin(A-B) = \sin A \cos B - \cos B \sin A$$

to see that $\sin(A+B) + \sin(A-B) = 2\sin A \cos B$. It follows that $\frac{1}{2}[\sin(A+B) + \sin(A-B)] = \sin A \cos B$ and

$$\int \sin 8x \cos 5x \, dx = \frac{1}{2}\int (\sin(13x) + \sin(3x)) \, dx = \boxed{\frac{1}{2}\left(-\frac{\cos(13x)}{13} - \frac{\cos(3x)}{3}\right) + C}.$$