PRINT Your Name:____________________________________

Quiz 6, Spring , 2013 – April 16

The quiz is worth 5 points. **Remove EVERYTHING from your desk except this quiz and a pen or pencil.** SHOW your work. Express your work in a neat and coherent manner. $\boxed{\text{BOX}}$ your answer.

Find the Laplace transform of $f(t) = \cos^2 2t$.

Answer. Of course, we use $\cos^2\theta = \frac{1}{2}(1+\cos 2\theta)$. We have

$$\mathcal{L}(f(t)) = \mathcal{L}(\tfrac{1}{2}(1+\cos 4t)) = \tfrac{1}{2}\left(\mathcal{L}(1) + \mathcal{L}(\cos 4t)\right) = \boxed{\frac{1}{2}\left(\frac{1}{s} + \frac{s}{s^2+16}\right)}.$$