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**Q1(4 pts):** Find the area of the region between the graph of  $y = \cos(2x)$  and the x-axis where  $0 \leq x \leq \frac{3\pi}{2}$ .

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**Q2(2 pts):** Find  $\frac{dy}{dx}$  where  $y = \int_{\sqrt{x}}^{x^3} (\sqrt{t} \sin t) dt$ .

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**Q3(4 pts):** Evaluate one of the integrals:

**a.)**  $\int x^7 \sqrt{x^4 + 1} dx$ .

**b.)**  $\int \frac{\cos 2x}{\cos x + \sin x} dx$ .

*Best wishes*