

Name: _____
MAT 295

Quiz 13
Fall 2016

Problem 1: Suppose $\int_0^{10} f(x) dx = 8$, $\int_0^3 f(x) dx = -2$, and $\int_3^{10} g(x) = 3$.

What is $\int_3^{10} (f(x) + 2g(x)) dx$?

Problem 2: Evaluate the following integrals:

$$\int \frac{\sin x}{\cos^4 x} dx$$

$$\int x^2 \cos x^3 dx =$$

$$\int \frac{e^{\sqrt{x}}}{\sqrt{x}} dx =$$

Problem 3: Find $\frac{d}{dx} \int_x^{2x} \frac{dt}{\sqrt{1+t^2}}$

Problem 4: Find $\frac{d}{dx} \left(\int_{x^2}^0 \cos t \, dt \right)^3$

Problem 5: Find the average value of $\sin x$ on $[0, \pi]$.