King **F**ahd **U**niversity for **P**etroleum and **M**inerals
Department of Mathematics & Statistics
Term 141 Math 102 (7) Quiz#1 (5.3, 5.4, 5.5, & 5.6)
Family Name: S.r#

Q1. Find $b > 0$ such that the average value of $f(x) = b^2 x - x^2$ over $[0, b]$ is 0.

Q2. $\int \frac{x}{x^2 - 1} dx$

Q3. $\int_{2}^{-2} 3\sqrt{4 - x^2}\, dx$

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Q1. Find $\int_6^3 f(2x)dx$, If $\int_2^4 f(3x)dx = 5$

Q2. $\int \frac{dx}{\sqrt{x}(x+1)}$

Q3. $\int_1^e \frac{2^{\ln x}}{x} dx$

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Q1. for $f(x)=\frac{1}{x^4+1}$. Evaluate *i*. $\int_1^2\left(\frac{d}{dx}f(x)\right)dx$ *ii*. $\frac{d}{dx}\left(\int_1^2 f(t)dt\right)$

Q2. Evaluate $\int(x+2)(x-1)^7dx$

Q3. Find the area between $f=\frac{1}{x}$ and the *x-axis* over $[-2,-1]$