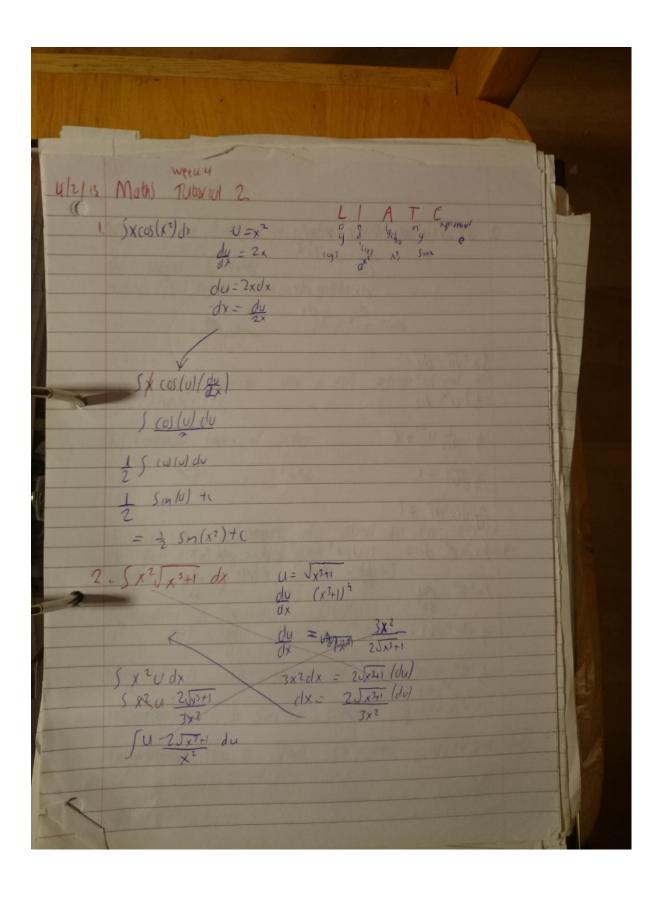
4/2/13 MA1E02 Tutorial Sheet 2. Week 4 2013 Questions Evaluate the following integrals: $\int x \cos(x^2) dx$ $\int x^2 \sqrt{x^3 + 1} dx$ (2) $\int x^2 e^{x^2} dx$ $\int \frac{e^x}{(1 - e^x)^2} dx$ $U = 1 - e^x$ $du = e^x$ $du = dx(-e^x)$ $dx = e^x$ (3) (4)



2. $\int x^{2} \int x^{3+1} dx \qquad U = x^{3} + 1$ $\frac{du}{dx} = 3x^{2}$ $\frac{dx}{dx}^{3} = du$ $\frac{du}{dx} = dx$ $\frac{du}{dx}^{2} = dx$ 5x 2 Ju du 3x2 = 3 S u 1/2 du $\frac{1}{3} \cdot \frac{1}{3/2} u^{3/2} + C$ $\frac{2}{3} \sqrt{(y^3+1)^9} + C$ $\frac{2}{3} \sqrt{(y^3+1)^9} + C$ $\frac{2}{3} \sqrt{(y^3+1)^9} + C$ U=x² du= dx 3x2 dx = du $3x^2$ + Se" du