MATH 1700 D01 Summer 2016 Assignment 3

SHOW ALL WORK to get full marks. Leave answers as a fraction. For example, leave it as fractions such as 1/7 as opposed to decimals such as 0.142857. Word problems should have sentence answers with units. Fractions should be lowest terms.

All assignments must be handed in on UMLearn as **one PDF file**. Late assignments will not be accepted. Failure to follow the instructions will result in a mark of 0.

Find the following definite or indefinite integrals

[4] 1. $\displaystyle\int_0^{\pi/2} \sin^4\theta\, d\theta$

[4] 2. $\displaystyle\int \frac{\sin^2\theta}{\cos^6\theta}\, d\theta$

[5] 3. $\displaystyle\int_1^8 \sqrt[3]{x}\ln x\, dx$

[6] 4. $\displaystyle\int xe^{\sqrt{x}}\, dx$

[8] 5. $\displaystyle\int \frac{2t^3+3t^2-18t+36}{t^4+9t^2}\, dt$

[6] 6. $\displaystyle\int e^{3x}\sin x\, dx$

[8] 7. $\displaystyle\int \frac{y^2}{(y^2-4)^{5/2}}\, dy$

[4] 8. $\displaystyle\int t(2\cos^2 t-1)\, dt$

[5] 9. $\displaystyle\int_{-1}^{1} \frac{3x^3-4x^2-5x-6}{x-2}\, dx$

[10] 10. Find the area of the region bounded by the hyperbola $y^2-x^2=16$ and the line $y=5$.

This assignment is out of 60 points.