Instructor: Leo Goldmakher

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Williams College
Department of Mathematics and Statistics

MATH 140 : Calculus II

Problem Set 14 – due Tuesday, April 21st

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INSTRUCTIONS: This assignment must be turned in by email on Tuesday at **9am** EDT (that's morning in Williamstown) by going to

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https://bit.ly/2RRu2aV

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You may submit photos or scans of your written work; please make sure your name appears on each page. (You can also try using the scratchwork app: https://app.scratchwork.io/ to write up your HW.) Be prepared to discuss these problems in your upcoming small group meeting.

14.1 Evaluate $\int 2 \, dx$

14.2 Evaluate $\int x^5 - 1 \, dx$

14.3 Evaluate $\int \dfrac{dx}{\sqrt{9x^3}}$ (This is the same as $\int \dfrac{1}{\sqrt{9x^3}} \, dx$)

14.4 Evaluate $\int_2^4 \dfrac{dx}{x}$ [*Ans:* $\ln 2$]

14.5 Evaluate $\int_{-2}^{-1} \dfrac{dx}{x}$ [*Ans:* $-\ln 2$]

14.6 Evaluate $\int \dfrac{dx}{x}$ [*Hint: your answer should apply to both of the previous questions. Does it?*]

14.7 Determine $\dfrac{d}{dx} \int_{\ln x}^{3x} \dfrac{\sin t}{t} \, dt$ [*Hint: Don't actually try to find the antiderivative.*]