

3	4 EMCF08 due at 9am-key Notes: page, 4-per, video notes, video Homework 3 due in lab/workshop	5 Practice Test 2 is posted on CourseWare, and it is a required online quiz	6 EMCF09 due at 9am - key Notes: page, 4-per, video notes, video Homework 4 posted	7 Review Problems for Test 2 (7.1-8.3) Solutions: notes, videos	8 EMCF10 due at 9am Live Test 2 Review Part I Notes: page, 4-per (see Monday for the video) Quiz in lab/workshop	9 Quiz 3 closes (7.6-7.8)
10	11 EMCF11 due at 9am Live Test 2 Review Part II Blank Slides: page, 4-per Homework 4 due in lab/workshop	12 UH events this week	13 EMCF12 due at 9am Homework 5 posted	14 Test 2 starts (7.1-8.3) Check the dates on CourseWare	15 EMCF13 due at 9am Quiz in lab/workshop	16 Quiz 4 closes (8.1-8.3)
17 Practice Test 2 closes	18 EMCF14 due at 9am Homework is NOT DUE until Wednesday	19	20 EMCF15 due at 9am Homework 5 due in lab/workshop	21	22 EMCF16 due at 9am Quiz in lab/workshop	23 Quiz 5 closes (8.4 & review)

Test 2 Review

(Continued from Friday)

- Inverse functions
- Logarithmic functions
- Exponential functions
- Logarithmic differentiation
- Exponential growth and decay (word problems)
- Inverse trig functions
- Hyperbolic functions
- Integration by parts
- Integration of powers and products of trig functions

7.1 - 8.3

Addition Problems: See the homework, examples given in the class notes, questions from poppers, questions from EMCFs, questions in online quizzes, review problems and videos posted from the lectures page, and questions given on Friday quizzes.

30% MC
70% Written

Example: Compute $\int \sin^3(x)\cos^3(x)dx = \int \sin^3(x)\cos^2(x) \underline{\underline{\cos(x)dx}}$

$$= \int \sin^3(x)(1 - \sin^2(x)) \underline{\underline{\cos(x)dx}}$$

$$= \int \sin^3(x)\cos(x)dx - \int \sin^5(x)\cos(x)dx$$

$$= \frac{1}{4}\sin^4(x) - \frac{1}{6}\sin^6(x) + C$$

Example: Compute $\int \tan^4(x)dx = \int \tan^2(x)\tan^2(x)dx$

$$= \int \tan^2(x)(\sec^2(x) - 1)dx$$

$$= \int \tan^2(x)\sec^2(x)dx - \int \tan^2(x)dx$$

$$= \frac{1}{3}\tan^3(x) - \int (\sec^2(x) - 1)dx$$

$$= \frac{1}{3}\tan^3(x) - \tan(x) + x + C$$

Example: Compute $\int \tan^3(x)\sec^3(x)dx$.

$$= \int \tan^2(x) \sec^2(x) \underline{\sec(x) \tan(x)} dx$$

$$= \int (\sec^2(x) - 1) \sec^2(x) \underline{\sec(x) \tan(x)} dx$$

$$= \int \sec^4(x) \underline{\sec(x) \tan(x)} dx - \int \sec^2(x) \underline{\sec(x) \tan(x)} dx$$

$$= \frac{1}{5} \sec^5(x) - \frac{1}{3} \sec^3(x) + C$$

Example: Compute $\int \tan^2(x)\sec^3(x)dx$.

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