**MATH 1042 REVIEW PROBLEMS FOR TEST 2 Fall 2019**

1. Text: **James Stewart**, *Calculus, Early Transcendentals*, 8th Edition, Cengage learning.
2. *Math 1042 ADDITIONAL Homework Problems*

**7.3:** 1, 2, 3, 7 (in problem 7 take a=16), 8, 9, 13, 14

**7.4:** 1, 3, 4a, 9, 15, 19, 22, 23

**7.8:** 1, 2 (in problem 1 and 2 also present each improper integral as a limit of a proper integral), 5, 11, 14, 29, 35, 45, 49, 50, 51, 52

**Review Chapter 7:** 11, 33, 71

**11.1:** 26, 28, 29, 30, 35, 36, 38, 40, 47, 50, 51, 55, 56

**11.2:** 3, 4, 22, 23, 24, 26, 31, 33, 34, 39, 46, 47, 57, 59

**11.3:** 3, 4, 7, 15, 17

**11.4:** 1, 2, 3, 7, 10, 11, 13, 15, 17, 19, 23; **A11:** 5abd

**11.5:** 5, 6, 7, 9, 10, 13, 14

**11.6:** 3, 4, 5, 6

**Review Chapter 11:** 6, 8, 14, 15, 29

1. Following integrals can be used without work.

$$\int \frac{1}{a^2+x^2}\,dx = \frac{1}{a}\tan^{-1}\frac{x}{a}+C, \qquad \int \tan x\,dx = \ln|\sec x|+C, \qquad \int \sec x\,dx = \ln|\sec x+\tan x|+C$$

2. Following limits can be used without proof.

$$\lim_{n\to\infty}\frac{\ln n}{n^c}=0 \quad \text{if} \quad c>0; \qquad \lim_{n\to\infty}\frac{n^c}{e^n}=0, \quad \text{for } c>0; \qquad \lim_{n\to\infty}\frac{b^n}{n!}=0 \text{ , for any real number } b;$$

$$\lim_{n\to\infty}\sqrt[n]{n}=\lim_{n\to\infty}n^{1/n}=1; \qquad \lim_{n\to\infty}\left(1+\frac{b}{n}\right)^n=e^b \quad \text{for any real number } b.$$

3. You must know the following trigonometric identities.

$$\tan^2\theta=\sec^2\theta-1, \qquad \cot^2\theta=\csc^2\theta-1,$$

**SSC (Students Success Center) Review Workshop for Test 2:**
**Saturday, November 9, 2-4pm at Charles Library 340**

**Review Session for Test 2 will be run by Professor Sivek**
**on Monday, November 11, 4pm-6:30pm in SERC 116**