MATH 1042 **Review Problems for Final Exam** **Fall 2018**

Text: **James Stewart**, *Calculus, Early Transcendentals*, 8th Edition, Cengage learning.

5.3: 7, 13, 17, 19, 21, 35

5.5: 18, 21, 31, 42, 43, 69

Chapter 5 Review: 8, 15, 25

6.1: 13, 22, 24

6.2: 1, 3, 13

7.1: 1, 5, 11, 19, 27

7.2: 3, 7, 11, 21, 25, 29, 57

7.4: 1, 3, 28

Chapter 7 Review: 16, 18, 30

11.2: 29, 37, 44

11.4: 3, 5, 7

11.5: 5, 7, 13, 20

11.6: 7, 9, 15, 19, 25, 27, 30, 35

11.7: 9, 18, 19, 25

11.8: 9, 11, 13, 15, 17, 19, 29, 30

11.9: 3, 5, 7, 13, 15, 17

11.10: 5, 9, 35, 37, 39, 54, 55

Chapter 11 Review: 16, 18, 47, 49, 51

Please note that on the test you may use **without proof** the following:

$$\int \frac{1}{a^2+x^2}\,dx = \frac{1}{a}\arctan\left(\frac{x}{a}\right)+C \qquad \text{and} \qquad \int \frac{1}{\sqrt{a^2-x^2}}\,dx = \arcsin(x/|a|)+C$$

$$\lim_{n\to\infty} n^{1/n} = 1; \qquad \lim_{n\to\infty} \frac{\ln n}{n^a} = 0 \text{ if } a>0;$$

for any numbers b and p, $\displaystyle\lim_{n\to\infty} \frac{n^p}{e^n} = 0, \quad \lim_{n\to\infty} \frac{b^n}{n!} = 0; \quad \lim_{n\to\infty} \left(1+\frac{b}{n}\right)^{pn} = e^{bp}$

$$e^x = \sum_{n=0}^{\infty} \frac{x^n}{n!} \qquad\qquad \frac{1}{1-x} = \sum_{n=0}^{\infty} x^n$$