

### **Math 21C Homework Assignments.**

- All problems are from the 14th edition of *Thomas' Calculus: Early Transcendentals* by George Thomas, Joel Hass, Christopher Heil, and Maurice Weir.
- As noted in the syllabus, only the homework problems marked "to submit" will be counted towards your grade. The other homework problems will not be submitted and are not counted towards your grade, but you are expected to complete them.
- The Lecture/Section correspondence listed below is approximate and is based on the tentative lecture topic schedule listed in the syllabus.

#### **HOMEWORK 1**

##### **From Lecture 1.**

##### **Section 10.1 (Sequences)**

Problems 1, 3, 5, 9, 13, 15, 29, 31, 33, 35, 39, 43, 45, 49, 55, 73, 75, 121, 123, 125, 127, 135

##### **From Lecture 2.**

##### **Section 10.2 (Infinite Series)**

Problems 1, 3, 7, 9, 11, 19, 31, 33, 35, 39, 41, 43, 53, 55, 57, 59, 61, 63, 69, 71, 77, 79, 81

#### **SUBMIT TO GRADESCOPE BY 10:00PM ON MONDAY, SEPTEMBER 26:**

Section 10.1 Problem 43 and Section 10.2 Problem 11

#### **HOMEWORK 2**

##### **From Lecture 3.**

##### **Section 10.3 (The Integral Test)**

Problems 1, 3, 5, 7, 15, 21, 39, 45

##### **From Lectures 4 and 5.**

##### **Section 10.4 (Comparison Tests)**

Problems 1, 3, 5, 9, 11, 15, 19, 23, 31, 35, 37, 41, 43

#### **SUBMIT TO GRADESCOPE BY 10:00PM ON MONDAY, OCTOBER 3:**

Section 10.3 Problem 5 and Section 10.4 Problem 15

### **HOMEWORK 3**

#### **From Lecture 6.**

##### **Section 10.5 (Absolute Convergence; The Ratio and Root Tests)**

Problems 1, 3, 5, 7, 9, 11, 13, 15, 17, 19, 23, 25, 33, 35, 37, 45, 57, 59, 61, 63, 67

#### **From Lecture 7.**

##### **Section 10.6 (Alternating Series and Conditional Convergence)**

Problems 1, 3, 5, 7, 9, 11, 13, 15, 19, 21, 25, 31, 37, 39, 49, 51, 59, 61

#### **From Lecture 8.**

##### **Section 10.7 (Power Series)**

Problems 1, 3, 5, 7, 9, 11, 13, 17, 23, 25, 31, 33, 37, 39, 41, 43, 45, 47

#### **SUBMIT TO GRADESCOPE BY 10:00PM ON MONDAY, OCTOBER 10:**

Section 10.5 Problem 19 and Section 10.6 Problem 21

### **HOMEWORK 4**

#### **From Lecture 9.**

##### **Section 10.8 (Taylor and Maclaurin Series)**

Problems 1, 3, 5, 7, 9, 11, 15, 21, 25, 31, 41

#### **From Lecture 10.**

##### **Section 10.9 (Convergence of Taylor Series)**

Problems 1, 5, 7, 9, 11, 13, 15, 17, 19, 21, 25, 39, 45

#### **From Lecture 11.**

##### **Section 10.10 (Applications of Taylor Series)**

Problems 1, 3, 11, 25, 29, 33, 41, 45

#### **SUBMIT TO GRADESCOPE BY 10:00PM ON MONDAY, OCTOBER 17:**

Section 10.8 Problem 31 and Section 10.9 Problem 21

### **HOMEWORK 5**

#### **From Lecture 12.**

##### **Section 12.1 (Three-Dimensional Coordinate Systems)**

Problems 1, 5, 9, 11, 17, 19, 21, 25, 29, 31, 35, 37, 51, 53, 55, 61

##### **Section 12.2 (Vectors)**

Problems 1, 3, 5, 7, 9, 11, 13, 15, 17, 21, 23, 25, 29, 33, 47, 49

#### **From Lecture 13.**

##### **Section 12.3 (The Dot Product)**

Problems 1, 3, 5, 9, 13, 19, 29, 31, 43

#### **SUBMIT TO GRADESCOPE BY 10:00PM ON MONDAY, OCTOBER 24:**

Section 12.2 Problem 33 and Section 12.3 Problem 5

## **HOMEWORK 6**

**From Lecture 14.**

**Section 12.4 (The Cross Product)**

Problems 1, 3, 5, 7, 9, 15, 19, 23, 25, 27, 29, 31

**From Lecture 15.**

**Section 12.5 (Lines and Planes in Space)**

Problems 1, 3, 5, 7, 9, 11, 21, 23, 25, 33, 35, 37, 39, 41, 43, 47, 49

**From Lecture 16.**

**Section 13.1 (Curves in Space and Their Tangents)**

Problems 1, 3, 5, 7, 9, 11, 13, 15, 17, 19, 23

**SUBMIT TO GRADESCOPE BY 10:00PM ON MONDAY, OCTOBER 31:**

Section 12.4 Problem 29 and Section 13.1 Problem 19

## **HOMEWORK 7**

**From Lecture 17.**

**Section 13.2 (Integrals of Vector Functions; Projectile Motion)**

Problems 1, 3, 7, 9, 11, 17, 19, 21, 23, 25, 27

**From Lecture 18.**

**Section 14.1 (Functions of Several Variables)**

Problems 1, 3, 7, 13;

ok to use a graphing tool for the following problems: 31, 33, 35, 37, 39, 43, 47, 49, 51, 53, 55, 57, 59, 63

**From Lecture 19.**

**Section 14.2 (Limits and Continuity in Higher Dimensions)**

Problems 1, 3, 5, 7, 9, 11, 13, 15, 17, 19, 25, 27, 29, 31, 33, 35, 37, 39, 41, 45, 49

**SUBMIT TO GRADESCOPE BY 10:00PM ON MONDAY, NOVEMBER 7:**

Section 13.2 Problem 27 and Section 14.2 Problem 13

## **HOMEWORK 8**

**From Lecture 20.**

**Section 14.3 (Partial Derivatives)**

Problems 1, 3, 5, 7, 9, 11, 13, 15, 17, 23, 25, 27, 29, 31, 37, 43, 57, 61, 71, 83, 85, 87, 91

**From Lecture 21.**

**Section 14.4 (The Chain Rule)**

Problems 1, 3, 9, 13, 15, 17, 19, 21, 23, 25, 27, 35, 37

**SUBMIT TO GRADESCOPE BY 10:00PM ON MONDAY, NOVEMBER 14:**

Section 14.3 Problem 85 and Section 14.4 Problem 35

## **HOMEWORK 9**

**From Lecture 22.**

**Section 14.5 (Directional Derivatives and Gradient Vectors)**

Problems 1, 3, 7, 9, 11, 15, 17, 19, 25, 31

**From Lecture 23.**

**Section 14.6 (Tangent Planes and Differentials)**

Problems 1, 3, 7, 9, 11, 21, 23, 27, 29, 31, 35, 37

**SUBMIT TO GRADESCOPE BY 10:00PM ON MONDAY, NOVEMBER 21:**

Section 14.5 Problem 15 and Section 14.6 Problem 31

## **HOMEWORK 10**

**From Lectures 24 and 25.**

**Section 14.7 (Extreme Values and Saddle Points)**

Problems 1, 3, 9, 13, 15, 19, 23, 33, 45

**SUBMIT TO GRADESCOPE BY 10:00PM ON MONDAY, NOVEMBER 28:**

Section 14.7 Problems 19 and 45

## **HOMEWORK 11**

**From Lecture 26 and 27.**

**Section 14.8 (Lagrange Multipliers)**

Problems 1, 3

**NO PROBLEMS TO SUBMIT FOR THIS HOMEWORK!**