

## FINAL REVIEW

To prepare for the test, you should study **all quizzes and tests**, as well as the **homework problems** listed below OR the similar examples done in class from the listed topics.

Important topics:

**1) Finding limits using properties, The Sandwich Theorem, L'Hopital rule.**  
(several questions)

- 2.1 Exercises 21 – 28
- 2.2 Exercises 1, 7, 13, 19, 31, 49, 51
- 2.4 Exercises 4, 5, 7, 11, 15, 17, 21, 27, 33, 37, 43, 49, 55, 61
- 2.5 Exercises 1, 7, 13, 19, 25
- 4.6 Exercises 1, 7, 17, 22, 25, 28, 31, 34, 37, 40, 43, 47, 51, 56
- Handout Review Chapter 4      Exercise 4
- Quizzes #2,3      All exercises
- Quiz #4      Exercise 1
- Quiz #8      Exercise 2

**2) Continuity**  
(one question)

- 2.6 Exercises 39, 40
- 3.4 Exercises 47, 48
- 4.6 Exercise 65

**3) Finding tangents to the graph of a function**  
(one question)

- 2.7 Exercises 13, 17, 27, 29, 31, 33
- 3.2 Exercises 41, 45
- 3.5 Exercises 79
- 3.6 Exercises 45, 47
- Quiz #4      Exercises 2

**4) Finding derivatives of functions**

using basic formulas, the product rule, the quotient rule, the chain rule, and logarithmic differentiation.

(multiple questions)

- 3.1 Exercises 1, 7, 13, 19, 39, 40, 41, 43, 51
- 3.2 Exercises 1, 7, 13, 19, 25, 31, 37
- 3.4 Exercises 1, 7, 13, 19, 25, 39, 43
- 3.5 Exercises 23, 25, 29, 35, 39, 41, 47, 53, 59, 61, 71
- 3.7 Exercises 11, 27, 33, 41, 49, 57, 77, 85
- 3.8 Exercises 49, 55, 61, 69
- Quizzes # 5, 6

**5) The derivative as a rate of change and related rates (3.3, 3.9)**  
(one or two questions)

Handout Sections 3.3 & 3.9 – All exercises

## **6) Implicit Differentiation (3.6)**

(one question)

3.6 Exercises 19, 23, 25, 33, 37, 45, 47

## **7) Extreme values of functions (4.1)**

(one or two questions)

4.1 Exercises 1 – 8, 15, 25, 31, 37

Handout Review Chapter 4 Exercises 1, 2

Quiz #7

## **8) Optimization applications (4.1, 4.5)**

(one or two questions)

4.1 Exercises 65, 68, 71, 69 (see Handout 4.1)

4.5 Example 5 – textbook

Handout 4.5 – All exercises

## **9) Graphing functions (4.3, 4.4)**

(one question)

4.4 Exercises 11, 14, 17, 20, 32, 33, 38, 41

Handout Review Chapter 4 Exercise 3

Quiz #8 Exercises 1

## **10) Finding antiderivatives and evaluating definite integral (4.8, 5.5, 5.6, 8.2)**

(multiple questions)

4.8 Exercises 25, 31, 37, 43, 49, 55, 61, 67, 73, 79, 91, 97, 103, 109

5.4 Exercises 1, 7, 13, 19, 25, 31, 43, 45, 47, 67, 73, 74

5.5 Exercises 1, 7, 13, 19, 25, 31, 43, 49

5.6 Exercises 1, 7, 13, 19, 25, 31, 37, 43

8.2 Exercises 1, 3, 5, 7, 9, 11, 13, 15, 21, 26, 28, 23, 25, 27, 29, 30

Quizzes # 9, 10, 11

## **11) Finding areas (5.3, 5.4, 5.6)**

(several questions)

5.3 Exercises 17, 19, 21, 53

5.4 Exercises 51, 53, 55, 57, 58, 59, 75, 76, 77, 78

5.6 Exercises 47, 49, 54, 55, 52, 58, 61, 67, 73, 85, 97, 100