

## Problem Set 9

### 6.5: Average Value of a Function

*Please indicate the members who are present. Also indicate the group coordinator.*

Group Number:	
Members:	

**Problem 1**

Find the average value of the function  $f(x) = x^2\sqrt{x+1}$  over  $[-1, 0]$ .

**Problem 2**

Find the average value of the function  $f(x) = \cos^2(\pi x)$  over  $[-1, 1]$ .

**Problem 3**

Find the number  $a < 0$  such that the average value of  $f(x) = 3x^2 - 2x + 2$  on the interval  $[a, 0]$  is equal to 8.

**Problem (Revision)**

If  $f$  is an EVEN continuous function and  $\int_0^4 f(x)dx = 5$ . Find  $\int_{-2}^2 [xf(x^2) + f(2x)] dx$ .