CSCE 222 [503] Discrete Structures for Computing
Spring 2015 – Philip C. Ritchey

Problem Set 5

Due dates: Electronic submission of the PDF file for this homework is due on **2/26/2015 (Thursday) before 11:59 p.m.** on `http://ecampus.tamu.edu`. A signed and stapled paper copy of the PDF is due on **2/27/2015 (Friday)** at the beginning of class.
You must show your work. **No work → no credit.**

Name: (type your name here)

Resources. Discrete Mathematics and Its Applications by Rosen, (additional people, books, articles, web pages, etc. that have been consulted when producing this homework)

On my honor, as an Aggie, I have neither given nor received any unauthorized aid on any portion of the academic work included in this assignment. Furthermore, I have disclosed all resources (people, books, web sites, etc.) that have been used to prepare this homework.

Signature: _____

Problem 1. (11 points) Using a proof similar to the one in class for the geometric series, prove that

$$\sum_{i=0}^{n-1} i = \frac{n(n-1)}{2}$$

Solution.

Problem 2. (11 points) Derive a general closed-form solution for the sum of an arithmetic progression $\{a_n\}$:

$$\sum_{i=m}^{n} a_i$$

Solution.

Problem 3. (12 points) Section 2.4, Exercise 17 d, f, h page 168
*You must show your **work** to get **credit**.*

Solution.

Problem 4. (11 points) Section 2.4, Exercise 24, page 169

Solution.

Problem 5. (11 points) Section 2.4, Exercise 34, page 169

Solution.

Problem 6. (11 points) Section 2.4, Exercise 36, page 169

Solution.

Problem 7. (11 points) Section 2.4, Exercise 40, page 169

Solution.

Problem 8. (11 points) Section 2.4, Exercise 44, page 170

Solution.

Problem 9. (11 points) Section 2.4, Exercise 46, page 170

Solution.

Checklist:

( ) Did you add your **name**?

( ) Did you disclose all **resources** that you have used?
(This includes all people, books, websites, etc. that you have consulted)

( ) Did you **sign** that you followed the Aggie honor code?

( ) Did you solve **every problem**?

( ) Did you submit the PDF file of your homework on **eCampus**?

( ) Did you submit a **signed and stapled** hardcopy of the PDF file **in class**?