NAME:_____ **08/18A19B/2016**

ASSIGNMENT: Arithmetic Series
DIRECTIONS: Use the formulas below and have fun!

$$u_n = u_1 + (n-1)d \qquad S_n = \frac{n}{2}(2u_1 + (n-1)d) = \frac{n}{2}(u_1 + u_n)$$

1. *[Maximum mark: 7]*

In an arithmetic sequence $u_{21} = -37$ and $u_4 = -3$.

[3 marks]

(a) Find

(i) the common difference;

(ii) the first term.

(b) Find S_{10}.

2.) *[3 marks]*

In an arithmetic sequence the second term is 7 and the sum of the first five terms is 50 Find the common difference of this arithmetic sequence.

3.) *[Maximum mark: 6]*

Let $u_n = 3 - 2n$.

(a) Write down the value of u_1, u_2, and u_3. *[3 marks]*

(b) Find $\sum_{n=1}^{20}(3-2n)$. *[3 marks]*

4.)

In an arithmetic series, the first term is -7 and the sum of the first 20 terms is 620.

(a) Find the common difference. *[3*

(b) Find the value of the 78^{th} term. *[2*

NAME:_____ **08/18A19B/2016**

Answer key: you must show steps and calculations to receive full marks.

1.) ai: $d = -2$
aii: $U_1 = 3$

b: $S_{10} = -60$

2.) $d = 3$

3.) a: $u_1 = 1$; $u_2 = -1$; $u_3 = -3$
b: $\sum_{n=1}^{20} -360$

4.) a: $d = 4$

b: $u_{78} = 301$