KEY

Math 20-1

~~L67 – FQ – 1.2 & 1.2~~ Arithmetic Sequences and Series

Use the following information to answer Q1:

An Arithmetic Sequence is shown below:

-3 -3

26, 23, 20, 17...

/2 **Q1:** Determine the 15th term in the sequence. *(2 marks)*

$t_n = t_1 + (n-1)d$

$t_n = 26 + (n-1)(-3)$

$t_{15} = 26 + (15-1)(-3)$

$t_{15} = 26 + (14)(-3)$

$t_{15} = -16$

Use the following information to answer Q2:

The 25th term of an Arithmetic Sequence is 19. The 34th term is -44.

/3 **Q2:** What is the 400th term in the sequence? *(3 marks)*

$m = \frac{y_2 - y_1}{x_2 - x_1} = \frac{(-44) - (19)}{34 - 25} = \frac{-63}{9} = -7$

$d = -7$

$t_n = t_1 + (n-1)d$ Use 25th term is 19

$19 = t_1 + (25-1)(-7)$

$19 = t_1 + (24)(-7)$

$187 = t_1$

$t_n = t_1 + (n-1)d$

$t_{400} = 187 + (400-1)(-7)$

$t_{400} = -2606$

KEY

Math 20-1

Use the following information to answer Q3:

An Arithmetic Sequence is shown below: $-5 + 10 + 25 + 40 + \ldots$ (+15, +15, +15)

/2 **Q3:** What is the sum of the first 40 terms? *(2 marks)*

$d = +15 \qquad t_1 = -5$

$S_n = \frac{n}{2}[2t_1 + (n-1)d]$

$S_{40} = \frac{40}{2}[2(-5) + (40-1)(15)]$

$S_{40} = 20[-10 + 585]$

$S_{40} = 11{,}500$

MARKING:

Beginning	0.0 – 3.0
Progressing	3.5 – 5.0
Competent	5.5 – 6.5
Exemplary	7.0