Ex. 3 Find the sum of the first 9 terms of the sequence

$7, -2, -11, \ldots$

$n = 9 \quad t_1 = 7 \quad t_n = -65$

$t_9 = 7 - 9(9-1)$

$t_9 = 7 - 9(8)$

$t_9 = 7 - 72$

$t_9 = -65$

$S = \frac{9}{2}(7 - 65)$

$S = \frac{9}{2}(-58)$

$S = \frac{-522}{2}$

$\boxed{S = -261}$

or:

$S_9 = \frac{9}{2}[2(7) + (-9)(9-1)]$

$= 4.5[14 - 72]$

$= 4.5[-58]$

$= -261$

1.2 Continued...

Ex. 4 Find the sum:

$4 + 7 + 10 + \ldots + 73$

$t_1 = 4 \quad n = 24 \quad t_n = 73$

① Use general term to find n

$t_n = 4 + 3(n-1)$

$t_n = 4 + 3n - 3$

$t_n = 3n + 1$

$73 = 3n + 1$

$\frac{72}{3} = \frac{3n}{3}$

$24 = n$

$S = \frac{24}{2}(4 + 73)$

$S = 12(77)$

$S = 924$

Ex. 5 Find the sum of all multiples of 6 between 1 and 999

$n = 166 \quad t_1 = 6 \quad t_n = 996$

① For multiples

$t_n = 6n$

② Find n:

$\frac{996}{6} = \frac{6n}{6}$

$n = 166$

③ Sum

$S = \frac{166}{2}(6 + 996)$

$S = 83(1002)$

$S = 83166$

Homework:

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* 1, 4b, 7a, 11, 15