

Exercise 3I

Modelling With Series

7)	wk 1	£ 10	AP	$a = £10$
	wk 2	£ 20		$d = £10$

a)	wk 3	£ 30
	wk 4	£ 40

$$S_n = \frac{n}{2}(2a + (n-1)d)$$

$$S_{52} = \frac{52}{2}(20 + 51 \times 10)$$

$$= \underline{\underline{£13,780}}$$

b) From 1st year earnings

$$\begin{aligned} \text{Weekly payment} &= a + (n-1)d \\ &= 10 + 51 \times 10 = £520 \end{aligned}$$

From 2nd year earnings

$$\text{Weekly payment of } £11 + £11 = £22$$

$$\underline{\underline{£520 + £22 = £540}}$$

c) From second year earnings

$$S_n = \frac{n}{2}(2a + (n-1)d)$$

$$\begin{aligned} a &= £11 \\ d &= £11 \end{aligned}$$

$$S_{52} = \frac{52}{2}(22 + 51 \times 11) = £15158$$

$$+ \text{1st year} = £520 \times 52 = \underline{\underline{£27040}}$$

$$\underline{\underline{£42198}}$$

Homework Exercise 3I Q 8, 9, 16