7)

a)

wk 1	£ 10
wk 2	£ 20
wk 3	£ 30
wk 4	£ 40

AP $a = £10$
       $d = £10$

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

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

$$= \underline{£13,780}$$

b) From 1st year earnings

Weekly payment $= a + (n-1)d$

$$= 10 + 51 \times 10 = £520$$

From 2nd year earnings

Weekly payment of $£11 + £11 = £22$

$$£520 + £22 = £540$$

c) From second year earnings $a = £11$
                                     $d = £11$

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

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

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

$$\underline{£42198}$$

Homework   Exercise 3I   Q8, 9, 16