

Question Six:

a)

$$(i) T_n = a + (n-1)d \quad a = -1, d = 5$$

$$T_{60} = -1 + (60-1)5$$

$$\therefore T_{60} = 294$$

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

$$S_{60} = \frac{60}{2} [2(-1) + (60-1)5]$$

$$= 30 [-2 + 295]$$

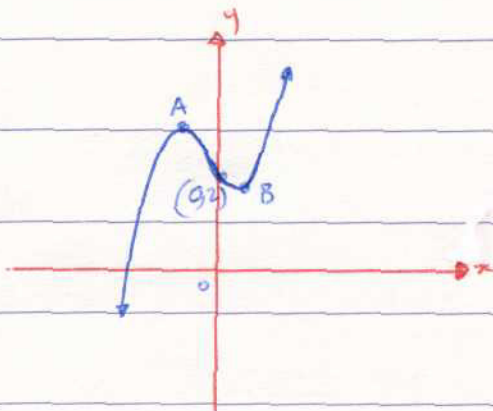
$$= 30(293)$$

$$\therefore S_{60} = 8790$$

b) $P = 100(1.23)^t$



c)



$$(i) \quad y = x^3 + x^2 - x + 2$$

$$y' = \frac{3x^2}{3} + \frac{2x}{3} - \frac{1}{3}$$

$$x^2 + \frac{2}{3}x - \frac{1}{3}$$

$$(x-2) \left(x + \frac{2}{3}\right)$$

(ii)