

6a.

$$-1 + 4 + 9 + \dots$$

i. find 60<sup>th</sup> term

$$t_{60} = a + (n-1)d$$

$$= -1 + (n-1)5$$

$$= -1 + 5n - 5$$

$$= -6 + 5n$$

$$-5n = -6$$

$$n = \frac{6}{5}$$

$$a = -1, d = 5$$

$$t_{60}$$

6a.i.

$$-1 + 4 + 9 + \dots$$

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

$$= 1 + (60-1)5$$

$$= 1 + (295-5)$$

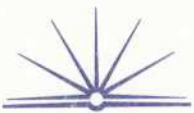
$$= 1 + 290$$

$$= 291$$

$$a = -1, d = 5$$

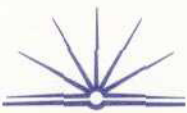
$$n = 60$$

the 60<sup>th</sup> term is 291



Saii.

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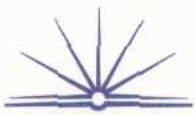


6b

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

$$P = 100e^{at}$$

$$a = 0.21 \text{ (2dp)}$$



6ci.

$$y = x^3 + x^2 - x + 2$$

$$y' = 3x^2 + 2x - 1$$

$$\text{let } x = 0$$

$$= -1 \quad (\text{gradient})$$

6cii. At point B the concave is up.

6ciii

$$x^3 + x^2 - x + 2 = k$$