6a. $-1+4+9+\ldots\ldots$

i. find 60th term

$t_{60} = a+(n-1)d$ $\quad a=-1,\ d=5$

$= -1+(n-1)5$ $\quad t_{60}=$

$= -1+5n-5$

$= -6+5n$

$-5n = -6$

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

6a.i. $-1+4+9+\ldots\ldots$

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

$= 1+(60-1)5$ $\quad n=60$

$= 1+(295-5)$

$= 1+290$

$= 291$

the 60th term is 291

Saii.

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6b $P = 100(1.23)^t$ $P = 100e^{\alpha t}$

$\alpha = 0.21$ (2dp)

6ci. $y = x^3 + x^2 - x + 2$

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

let $x = 0$

$= -1$ (gradient)

6cii. At point B the concave is up.

6ciii $x^3 + x^2 - x + 2 = k$