

**3rd August**

Corbettmaths

Here is a linear sequence

1924          1849          1774          ...

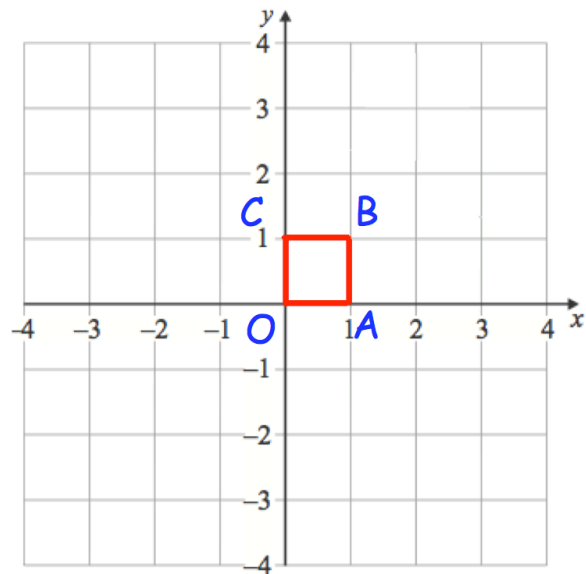
How many terms in the sequence are positive?

OABC is transformed by the matrix

$$\begin{pmatrix} -2 & 0 \\ 0 & -2 \end{pmatrix}$$

to give OA'B'C'

Draw and label OA'B'C'



Describe the transformation fully.

$$f(x) = \sqrt{x^2 + 10x - c}$$

with domain all values of  $x$ .Work out the possible values of  $c$ .

$$\text{Given } f(x) = 3x^3 - 9x^2 + 10x + 1$$

Show  $f(x)$  is an increasing function for all values of  $x$