

2nd May



Corbettmaths

At a summer camp, children pick a morning, an afternoon and an evening activity.

There are 4 morning and 7 evening activities to pick from. $4 \times 7 = 28$
 Altogether there are 224 different ways to choose their activities.

How many afternoon activities are there?

$$224 \div 28 = 8$$

8

The nth term of a sequence is

$$\frac{1 - 3n^2}{9n^2 + 1}$$

Write down the limiting value of the sequence $n \rightarrow \infty$

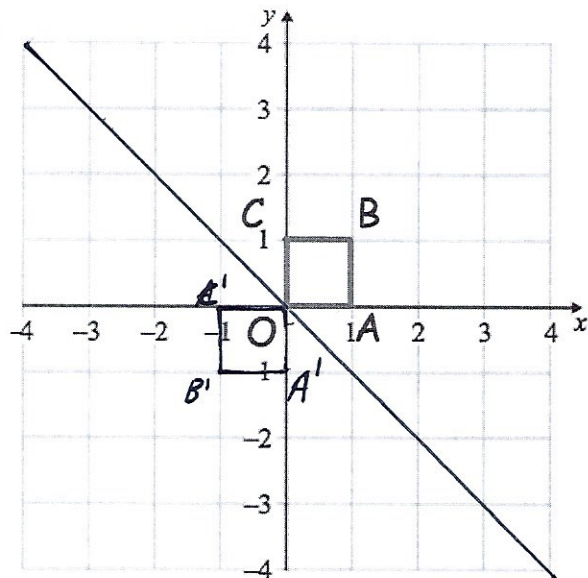
$$\frac{-3}{9} = -\frac{1}{3}$$

OABC is transformed by the matrix

$$\begin{pmatrix} 0 & -1 \\ -1 & 0 \end{pmatrix} \begin{pmatrix} 1 \\ 1 \end{pmatrix} = \begin{pmatrix} -1 \\ -1 \end{pmatrix}$$

to give OA'B'C' $\begin{pmatrix} 0 & -1 \\ -1 & 0 \end{pmatrix} \begin{pmatrix} 0 \\ 0 \end{pmatrix} = \begin{pmatrix} 0 \\ -1 \end{pmatrix}$

Draw and label OA'B'C'



Describe the transformation fully.

Reflection in $y = -x$

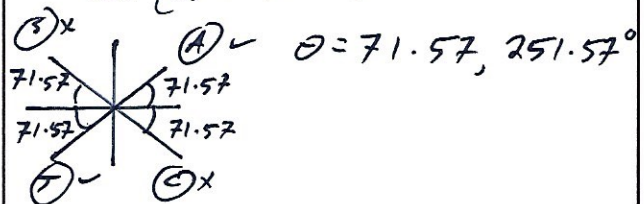
Solve $\tan^2\theta - 3\tan\theta = 0$
 for $0^\circ \leq \theta \leq 360^\circ$

$$\tan\theta(\tan\theta - 3) = 0$$

$$\tan\theta = 0 \text{ or } \tan\theta = 3$$

$0^\circ, 180^\circ, 360^\circ$

$$\tan^{-1}(3) = 71.57^\circ$$



$$\theta = 0^\circ, 71.57^\circ, 180^\circ, 251.57^\circ, 360^\circ$$