Summer Term Maths Year 10

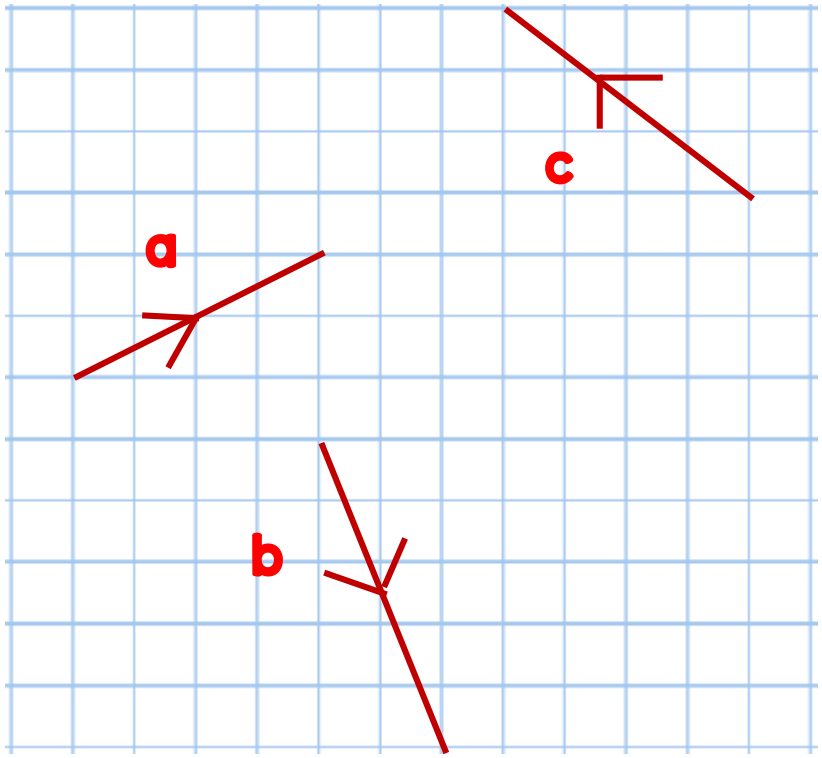
Column vectors

Day 4

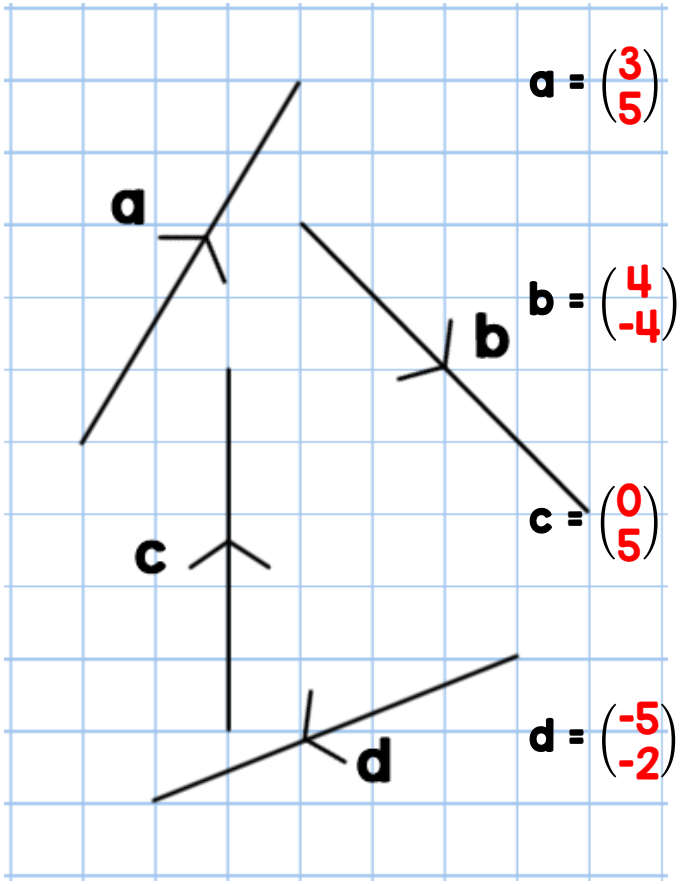
Week 7

1 Draw the following vectors on the grid below.

$a = \begin{pmatrix} 4 \\ 2 \end{pmatrix}$ $b = \begin{pmatrix} 2 \\ -5 \end{pmatrix}$ $c = \begin{pmatrix} -4 \\ 3 \end{pmatrix}$



2 Write the column vector each of the vectors shown.



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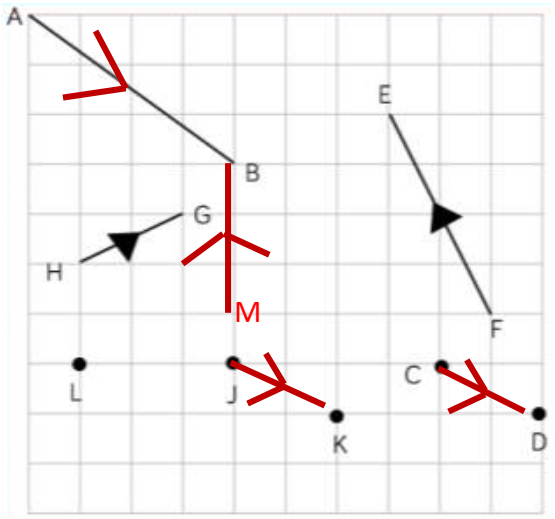
3



(a) Add an arrow onto the line segment to represent $\overrightarrow{AB}$.

(b) Write $\overrightarrow{AB}$ as a column vector. $\begin{pmatrix} 4 \\ -3 \end{pmatrix}$

(c) Teddy thinks vector $\overrightarrow{EF}$ is shown on the diagram. Is he right? Explain your answer.

No, vector $\overrightarrow{FE}$ is shown

(d) Represent the vectors $\overrightarrow{CD}$ and $\overrightarrow{JK}$ on the diagram. What do you notice about them?

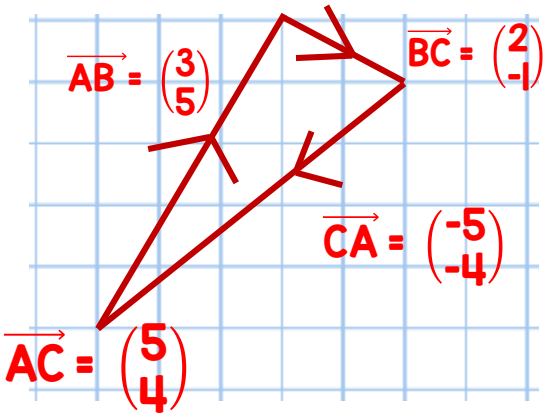
They are parallel and the same length

4

Given that

$\overrightarrow{AB} = \begin{pmatrix} 3 \\ 5 \end{pmatrix}$

$\overrightarrow{BC} = \begin{pmatrix} 2 \\ -1 \end{pmatrix}$



a) What is $\overrightarrow{CA}$?

b) What is $\overrightarrow{AC}$?

5

ABC is an isosceles triangle.

A = (3, 5)

B = (2, 2)

a) What is the coordinate of C?

(1,5) or (4,2) or (2,8)

b) What is the vector for $\overrightarrow{BC}$?

$\begin{pmatrix} -1 \\ 3 \end{pmatrix}$ or $\begin{pmatrix} 2 \\ 0 \end{pmatrix}$ or $\begin{pmatrix} 0 \\ 6 \end{pmatrix}$

c) What is the vector for $\overrightarrow{CA}$?

$\begin{pmatrix} 2 \\ 0 \end{pmatrix}$ or $\begin{pmatrix} -1 \\ 3 \end{pmatrix}$ or $\begin{pmatrix} 1 \\ -3 \end{pmatrix}$

White Rose Maths