Vector notation

99a

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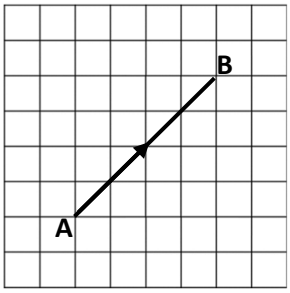
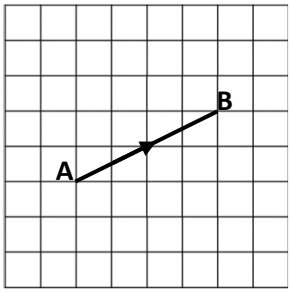
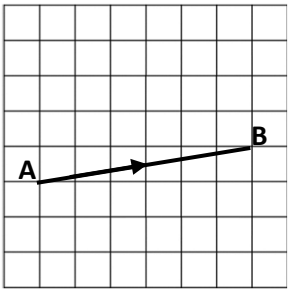
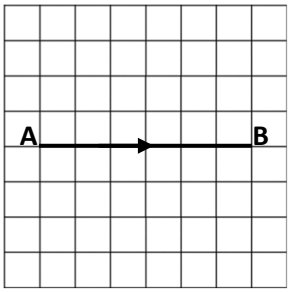
Name:

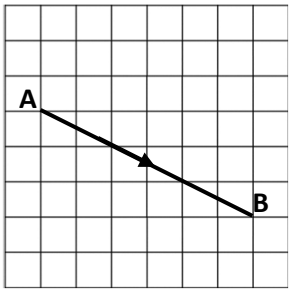
Write each vector $\overrightarrow{AB}$ as a column vectors:

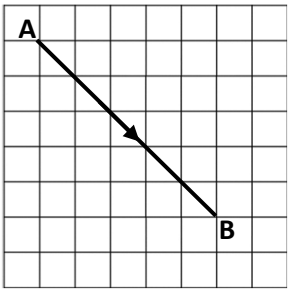
a) 

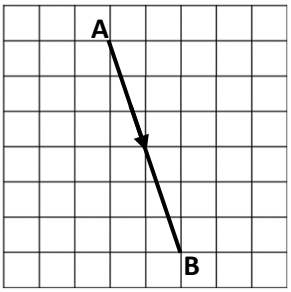
b) 

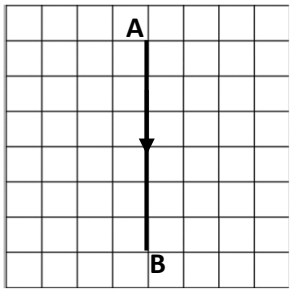
c) 

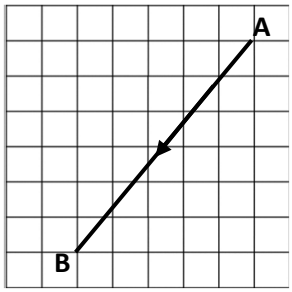
d) 

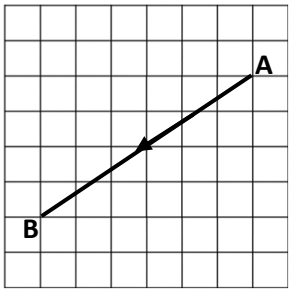
e) 

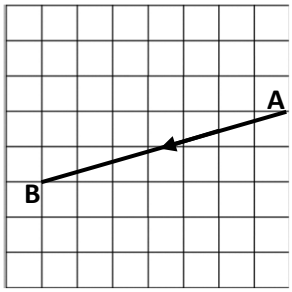
f) 

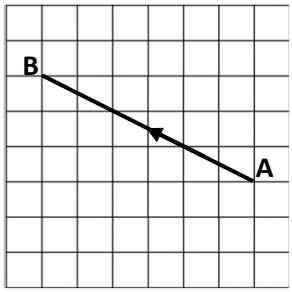
g) 

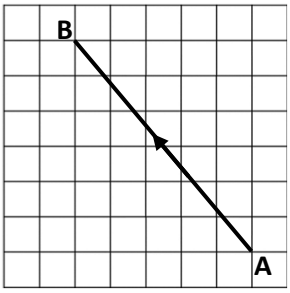
h) 

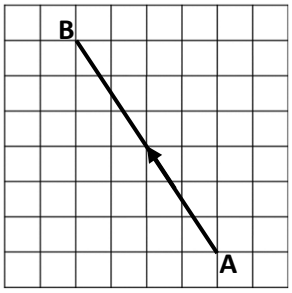
i) 

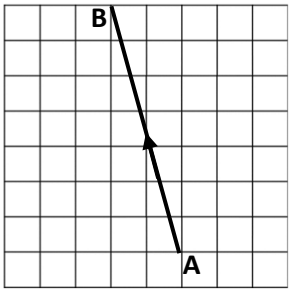
j) 

k) 

l) 

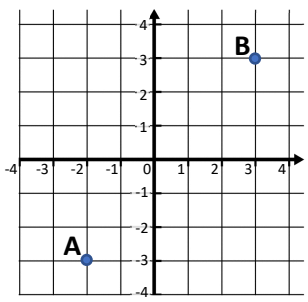
m) 

n) 

o) 

Exam question:
Two points are plotted on the co-ordinate grid and labelled A and B.

Write the vector of $\overrightarrow{BA}$ as a column vector.



Operations using vectors

99b

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Name:

Given the vectors **a** = $\begin{pmatrix}2\\3\end{pmatrix}$, **b** = $\begin{pmatrix}5\\6\end{pmatrix}$, **c** = $\begin{pmatrix}-2\\4\end{pmatrix}$ and **d** = $\begin{pmatrix}-7\\-6\end{pmatrix}$, find the vector of:

a) **a + b**

b) **b - a**

c) **c + b**

d) **a + d**

e) **c – b**

f) **b + d**

g) **d – a**

h) **a – d**

i) **c – d**

Given the vectors **a** = $\begin{pmatrix}2\\6\end{pmatrix}$, **b** = $\begin{pmatrix}8\\5\end{pmatrix}$, **c** = $\begin{pmatrix}-4\\3\end{pmatrix}$ and **d** = $\begin{pmatrix}-5\\-6\end{pmatrix}$, find the vector:

j) 2**a**

k) 2**d**

l) 7**d**

l) 3**c**

m) 2**a** + 2**b**

n) **3b + a**

o) 5**d – b**

p) 2**c** – 5**d**

q) 2**d** – 3**c** – 2**a**

For each of the following vectors, determine which vectors (**a** to **h**) shown in the box are parallel to it?

r) = $\begin{pmatrix}2\\4\end{pmatrix}$

s) = $\begin{pmatrix}3\\5\end{pmatrix}$

t) = $\begin{pmatrix}2\\8\end{pmatrix}$

u) = $\begin{pmatrix}-2\\3\end{pmatrix}$

v) = $\begin{pmatrix}5\\-3\end{pmatrix}$

w) = $\begin{pmatrix}-1\\-3\end{pmatrix}$

a = $\begin{pmatrix}-8\\-10\end{pmatrix}$ **b** = $\begin{pmatrix}2\\6\end{pmatrix}$ **c** = $\begin{pmatrix}-1\\-2\end{pmatrix}$ **d** = $\begin{pmatrix}-5\\8\end{pmatrix}$ **e** = $\begin{pmatrix}-8\\-32\end{pmatrix}$ **f** = $\begin{pmatrix}12\\20\end{pmatrix}$ **g** = $\begin{pmatrix}-10\\15\end{pmatrix}$ **h** = $\begin{pmatrix}10\\-6\end{pmatrix}$

If vectors **a** = $\begin{pmatrix}\mathbf{5}\\\mathbf{4}\end{pmatrix}$ and **b** = $\begin{pmatrix}\mathbf{2}\\\mathbf{-2}\end{pmatrix}$

Write the following as a column vector 2**a** + 3**b**