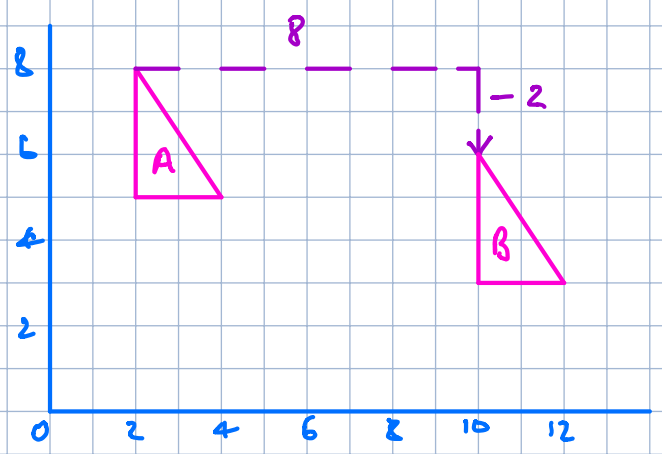
Transformations

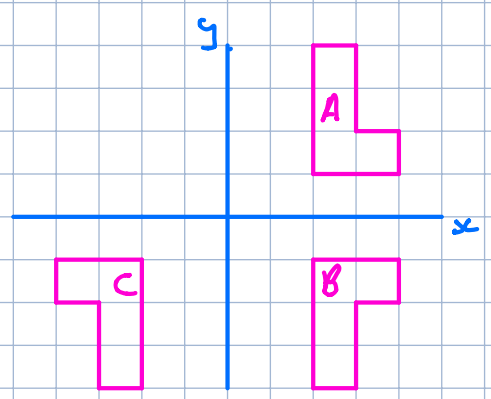
Translations, Reflections, Rotations, Enlargements

Translations



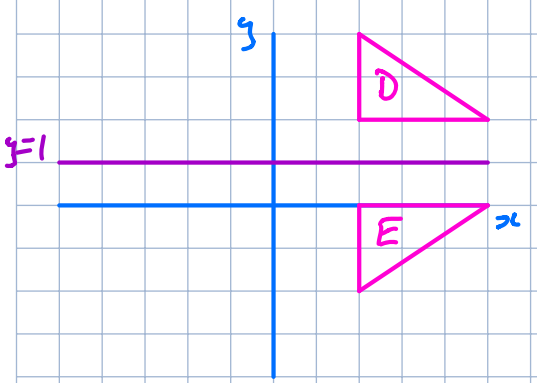
Translate A by $\begin{pmatrix} 8 \\ -2 \end{pmatrix}$ to give B

Reflections

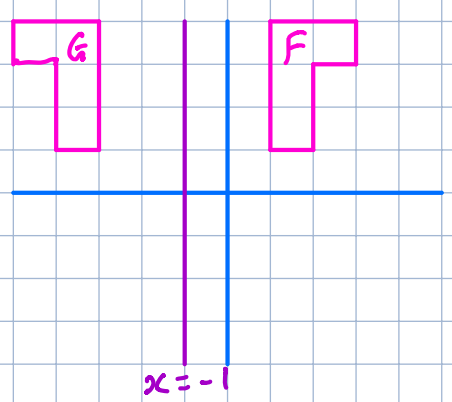


Reflect A in x-axis to give B

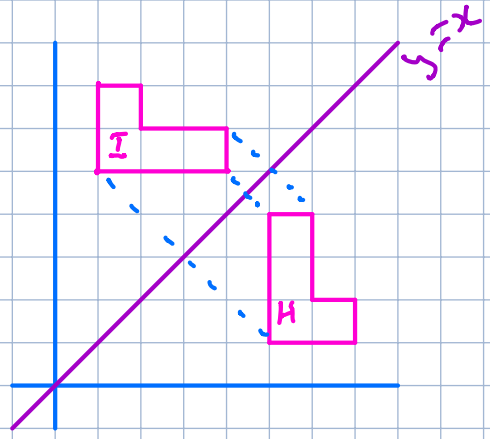
Reflect B in y-axis to give C



Reflect D in line $y=1$ to give E



Reflect in line $x=-1$ to give G



Reflect H in line $y=x$ to give I

$(x, y) \rightarrow (y, x)$

For corresponding points the coords swap eg $(5,4)$ becomes $(4,5)$

Vertical lines become horizontal

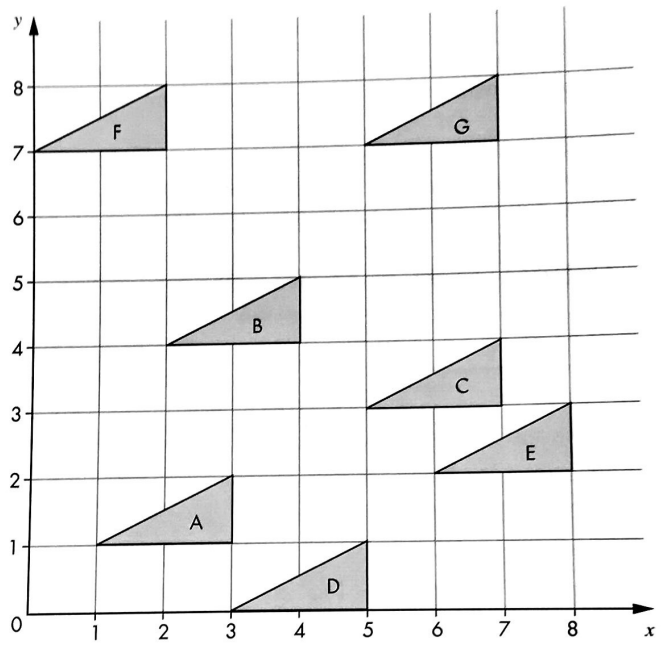
Horizontal lines become vertical

Points on $y=x$ do not move

Translations Exercise

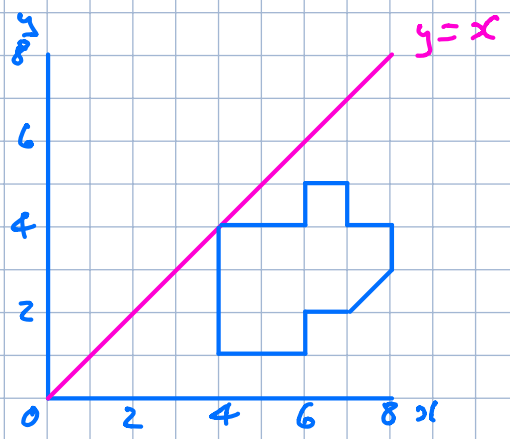
1 Use vectors to describe the following translations.

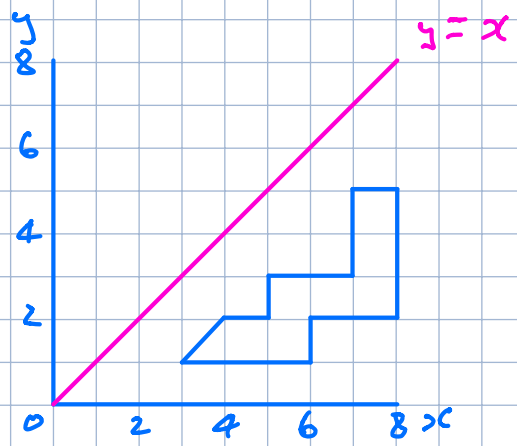
a i A to B	**ii** A to C	**iii** A to D	**iv** A to E	**v** A to F	**vi** A to G
b i B to A	**ii** B to C	**iii** B to D	**iv** B to E	**v** B to F	**vi** B to G
c i C to A	**ii** C to B	**iii** C to D	**iv** C to E	**v** C to F	**vi** C to G
d i D to E	**ii** E to B	**iii** F to C	**iv** G to D	**v** F to G	**vi** G to E

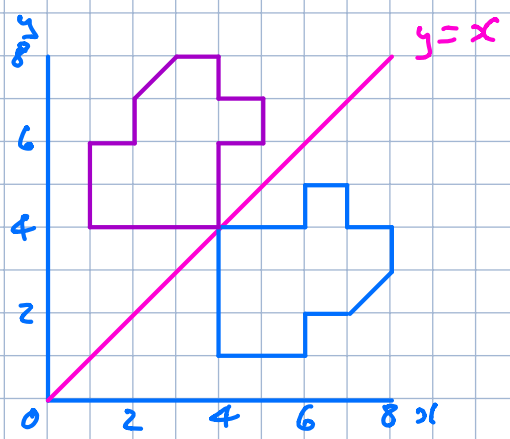


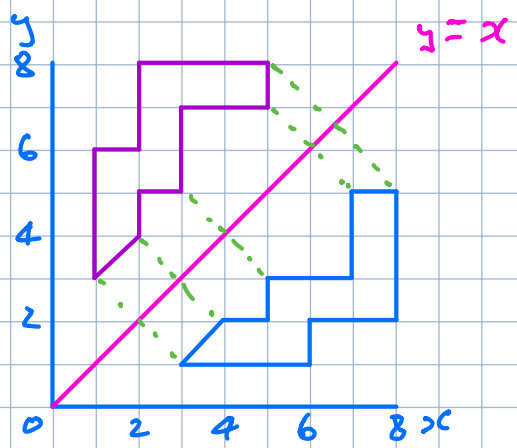
a i) A to B is a translation by $\begin{pmatrix}1\\3\end{pmatrix}$

a ii) A to C is a translation by $\begin{pmatrix}4\\2\end{pmatrix}$


y
8
6
4
2
0
2
4
6
8
x
y = x


y
8
6
4
2
0
2
4
6
8
x
y = x


y
8
6
4
2
0
2
4
6
8
x
y = x


y
8
6
4
2
0
2
4
6
8
x
y = x