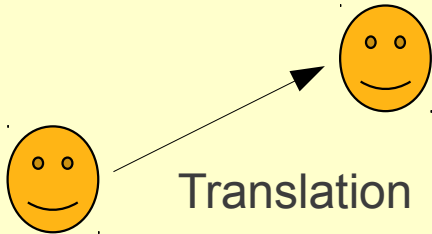
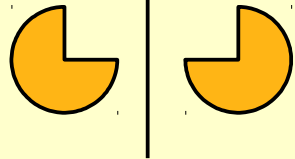


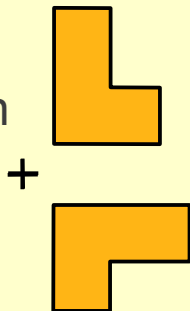
# 1 Transformations



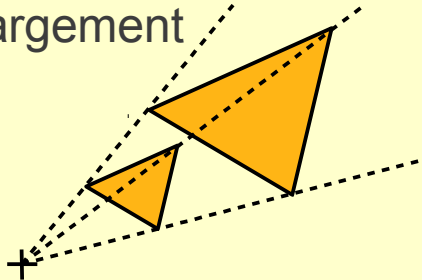
Reflection



Rotation

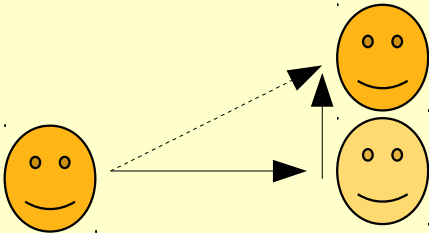
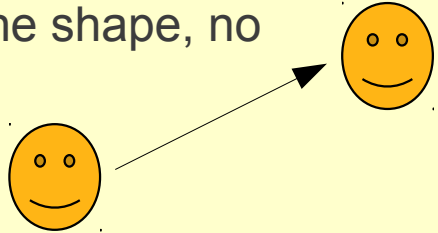


Enlargement



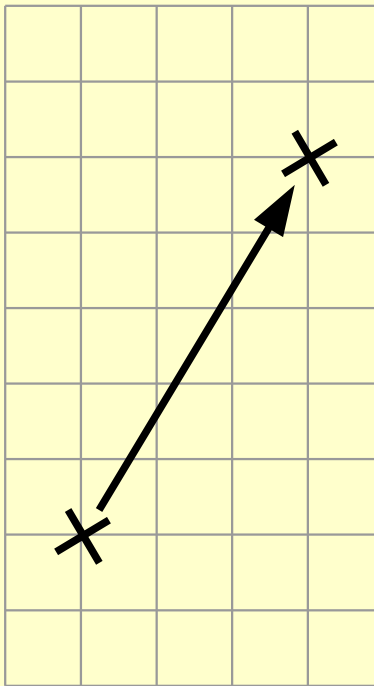
# 2 Translation

Translation: just moving the shape, no change in size or rotation.



You can always split a translation into a horizontal move and a vertical move

# 3

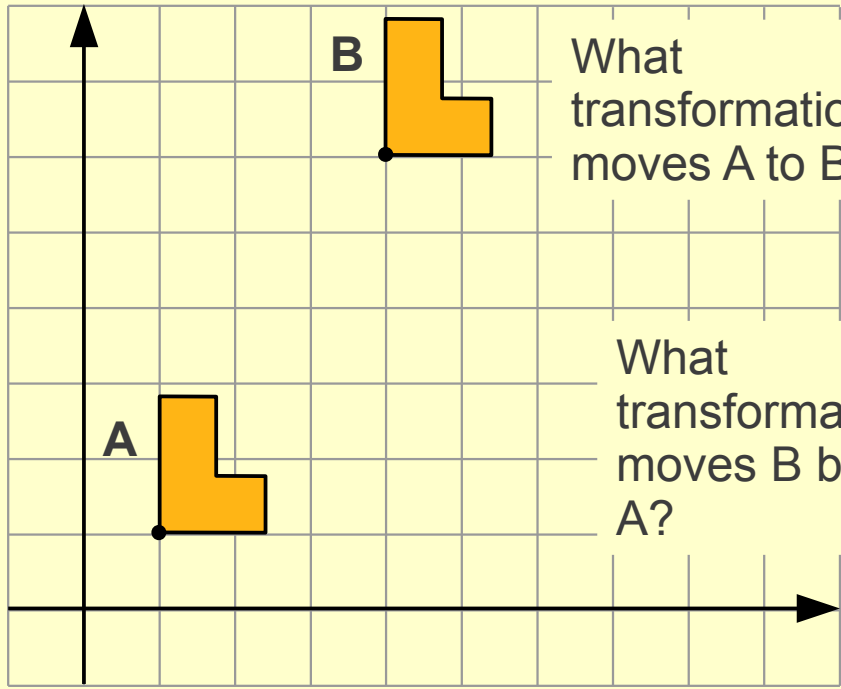


A 'column vector' tells you how far along and how far up

$$\begin{pmatrix} 3 \\ 5 \end{pmatrix}$$

Means move along 3 and then up 5

4



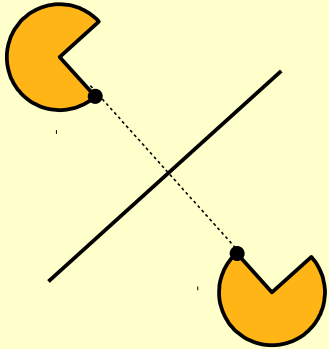
B

What transformation moves A to B?

A

What transformation moves B back to A?

# 5 Reflection



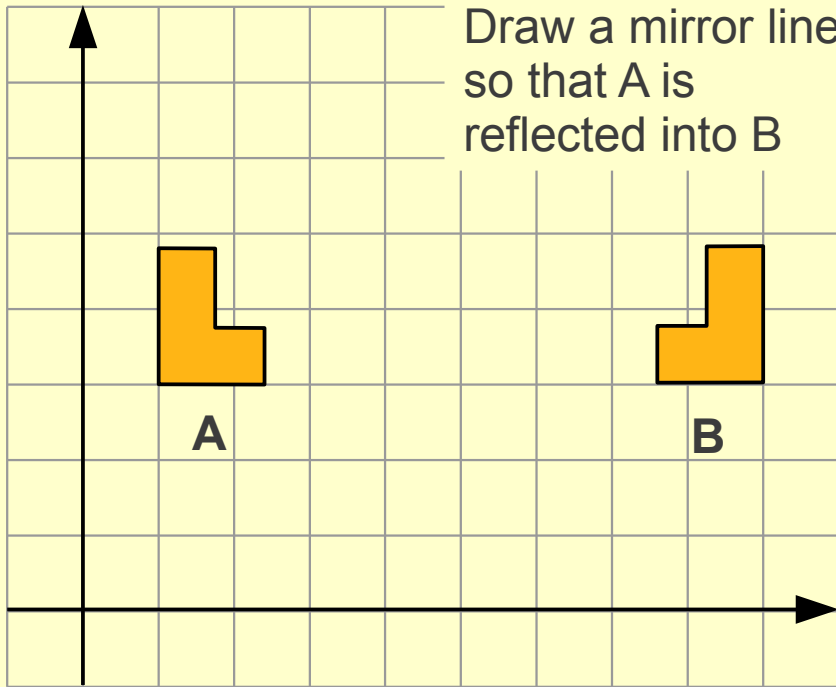
The mirror is represented by a line, and the reflected image is the same distance away on the other side of the mirror.

See how the red part of the shape is directly opposite the red part in the image?



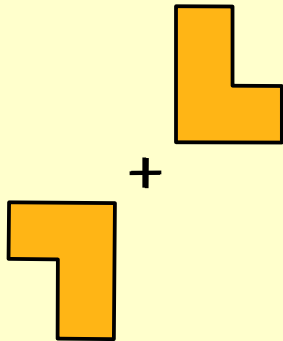
6

Draw a mirror line  
so that A is  
reflected into B

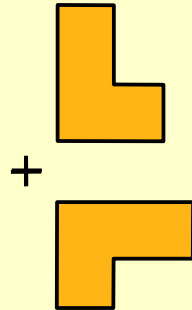


# 7 Rotation

A rotation has a centre, an angle and a direction (clockwise or anticlockwise)

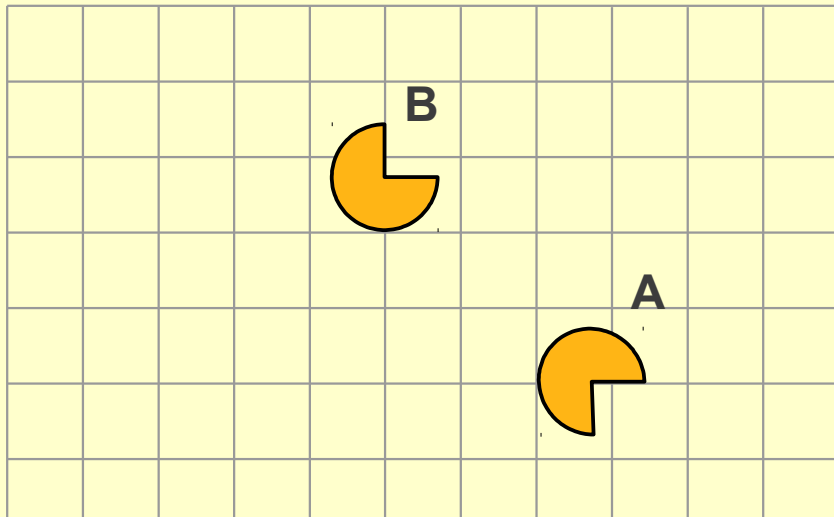


Rotation 180 degrees about the cross. Can be CW or ACW

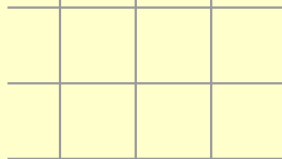


This rotation is through 90 degrees clockwise.

8

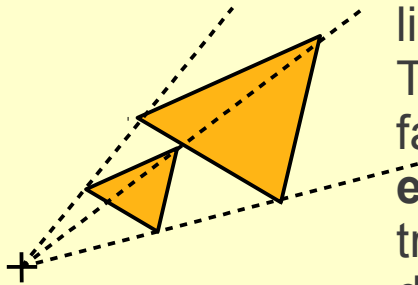


Describe the transformation from A to B fully



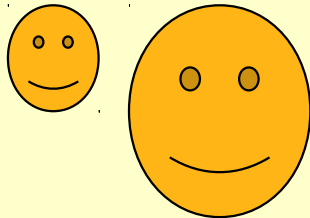


# 9 Enlargement

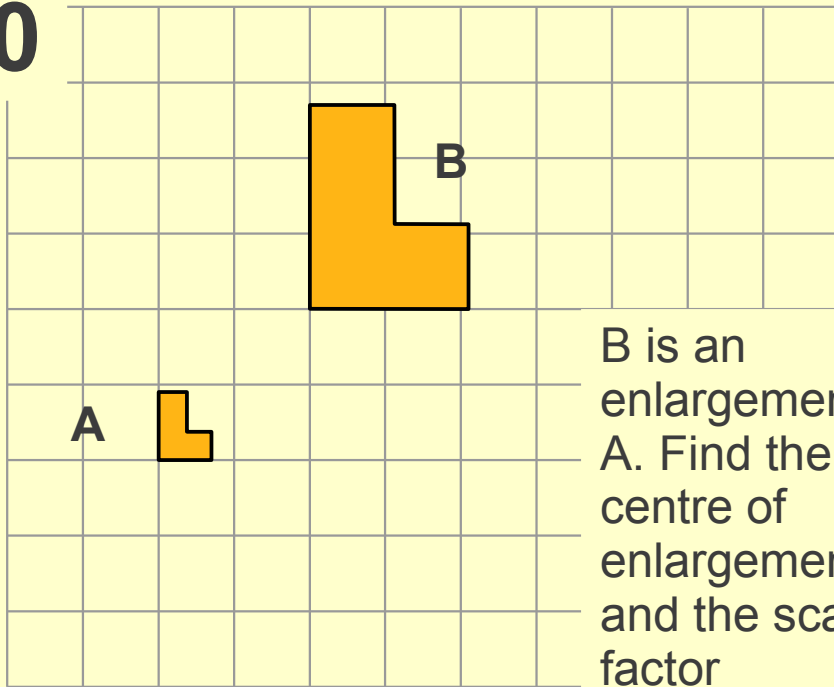


Enlargement from a point is like projecting an image. The larger triangle is twice as far from the **centre of enlargement** than the small triangle, so each length is doubled.

Simple enlargement means you just multiply each dimension by the **scale factor**



# 10



B is an enlargement of A. Find the centre of enlargement and the scale factor

# 11 The Quiz

Try answering these questions

# 12

Shape A is transformed into Shape B. Describe the transformation fully.

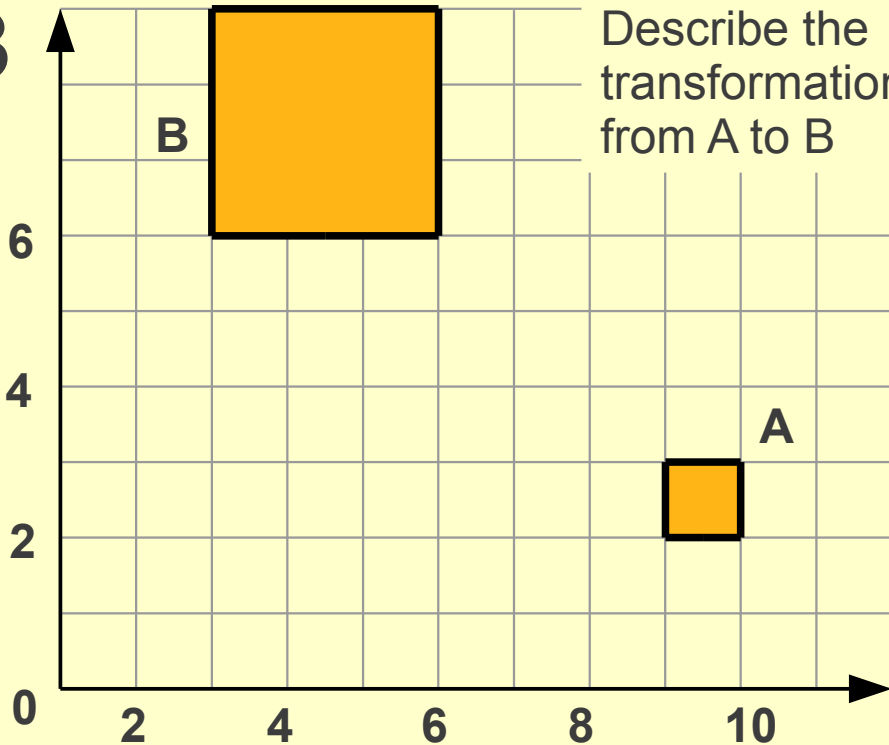


**B**



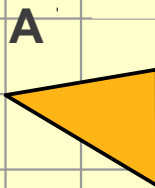
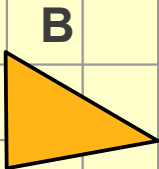
**A**

13



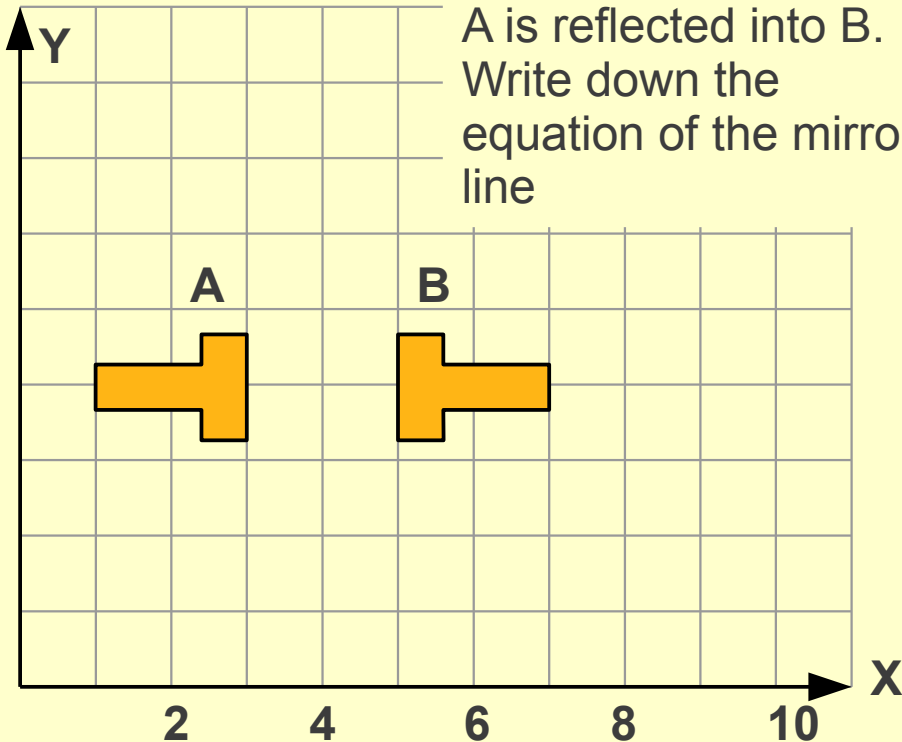
# 14

Explain why the transformation from A to B can't be a reflection.

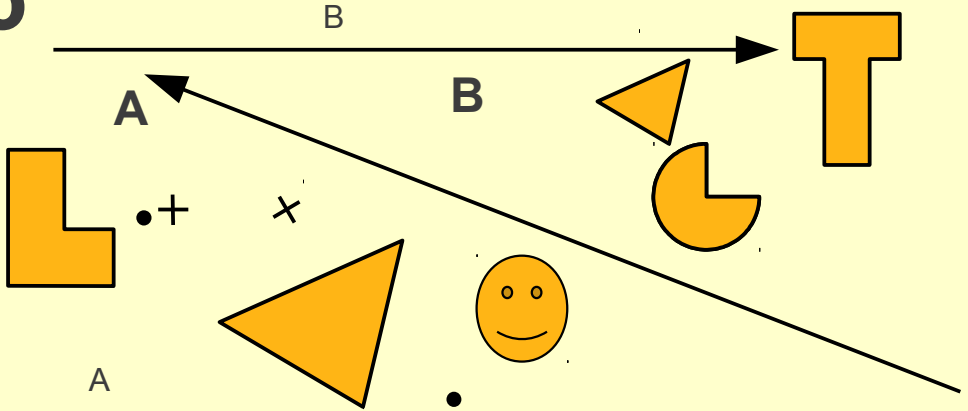


Describe the transformation from A to B

# 15



# 16



Now try some exam questions...