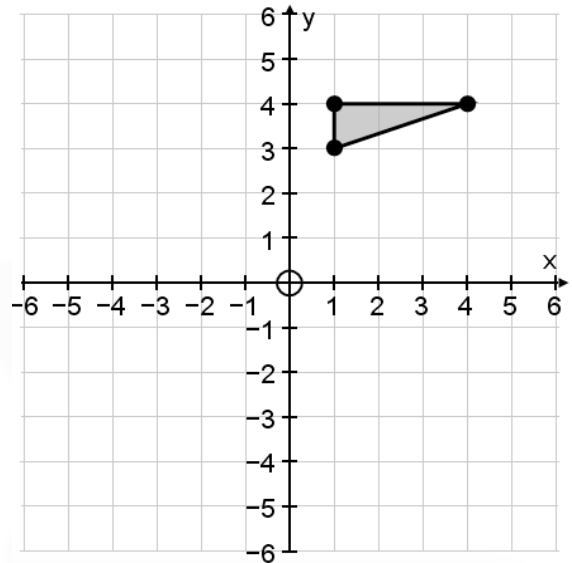


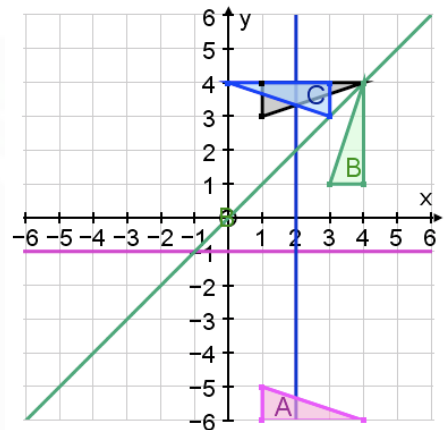
## Reflections

**E.g. 1** Reflect the shape in the line:

- $y = -1$ . Label the shape A
- $y = x$ . Label the shape B
- $x = 2$ . Label the shape C
- What happens to points of the shape that lie on the line of reflection?



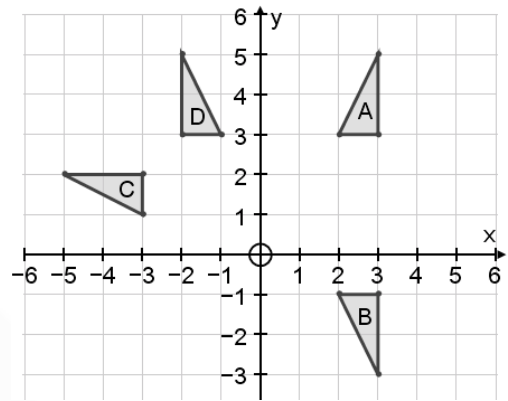
- Working:**
- The **pink** line is  $y = -1$ .
  - The **green** line is  $y = x$ .  
It is a good idea to rotate your page so that the line is vertical before attempting to draw the reflection.
  - The **blue** line is  $x = 2$ .



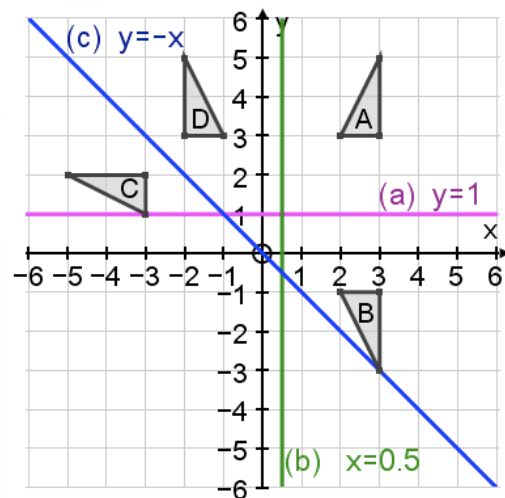
- Points that lie on the line of reflection remain in the same position.

**E.g. 2** Describe the transformation that takes:

- (a) triangle *B* to triangle *A*
- (b) triangle *A* to triangle *D*
- (c) triangle *C* to triangle *D*



- Working:**
- (a)  $y = 1$
  - (b)  $x = 0.5$
  - (c)  $y = -x$



**E.g. 3** Explain what happens to its *x*- and *y*-coordinates when a point is:

- (a) ...is reflected in the *x*-axis?
- (b) ...is reflected in the *y*-axis?
- (c) ...is reflected in the line  $y = x$ ?
- (d) ...is reflected in the line  $y = -x$ ?

- Working:**
- (a) *x*-coordinate remains the same, *y*-coordinate changes sign.
  - (b) *x*-coordinate changes sign, *y*-coordinate remains the same.
  - (c) The *x*- and *y*-coordinates swap around.
  - (d) The *x*- and *y*-coordinates swap around **and** change sign.

**E.g. 4** A shape is reflected in a line. Dotted lines are drawn between corresponding points on the object and image. What can be said about these lines and the line of reflection?

**Working:** They are perpendicular to one another.

Video: [Reflections](#)  
 Video: [Describing reflections](#)  
 Video: [Finding the mirror line](#)

**Exercise**

|                      |                   |
|----------------------|-------------------|
| 9-1 class textbook:  | p279 M9.4 Qu 1-10 |
| A*-G class textbook: | p239 M9.4 Qu 1-11 |
| 9-1 homework book:   | p96 M9.4 Qu 1-4   |
| A*-G homework book:  | p68 M9.4 Qu 1-4   |

[Homework book answers \(only available during a lockdown\)](#)

