

3.1 T2 Reflection

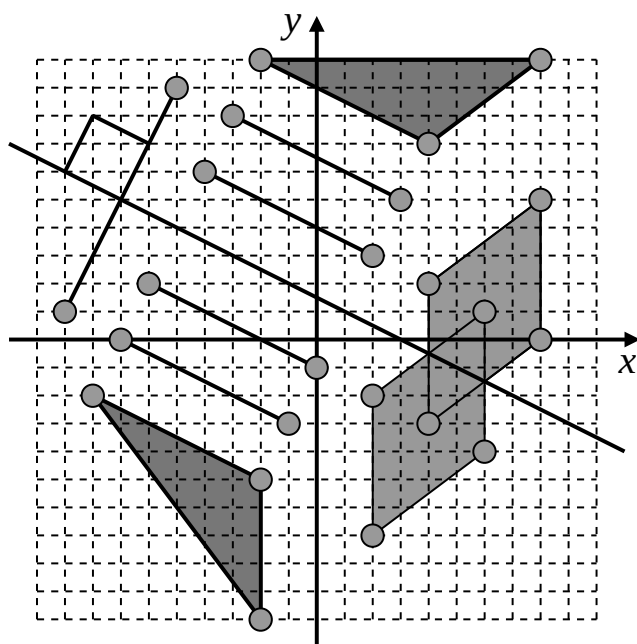
A **reflection** is the second of the four **transformations** to be studied.

In general, when a point or shape is transformed, the result is referred to as an *image*.

There are three key properties to keep in mind regarding reflections:

- Ref 1** The perpendicular distance of any point from the mirror is equal to the perpendicular distance of the image from the mirror.
- Ref 2** A line drawn from any point to its image passes through the mirror at 90° .
- Ref 3** A line parallel to the mirror has a reflection that is also parallel to the mirror.

It is useful to have a *set square* to help answer questions involving reflection.



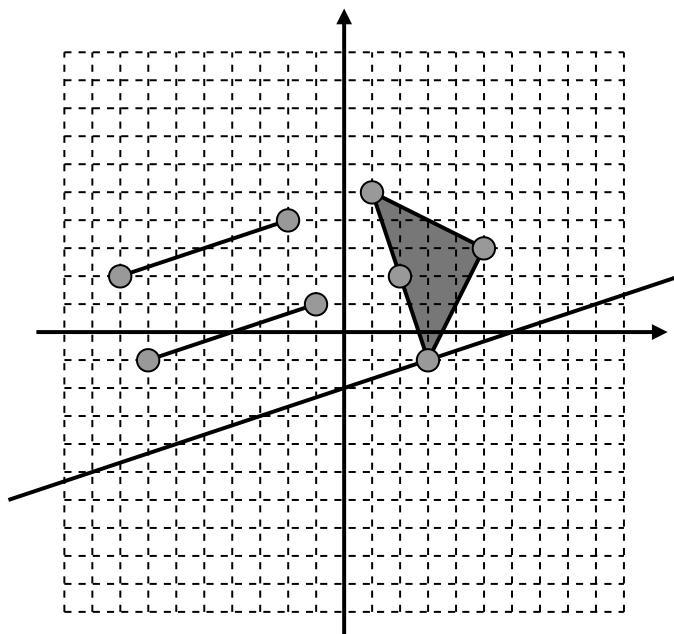
The mirror, being a straight line, has an equation of the form $y = m x + c$.

3.2 Example

What is the equation of the mirror line, shown above ?

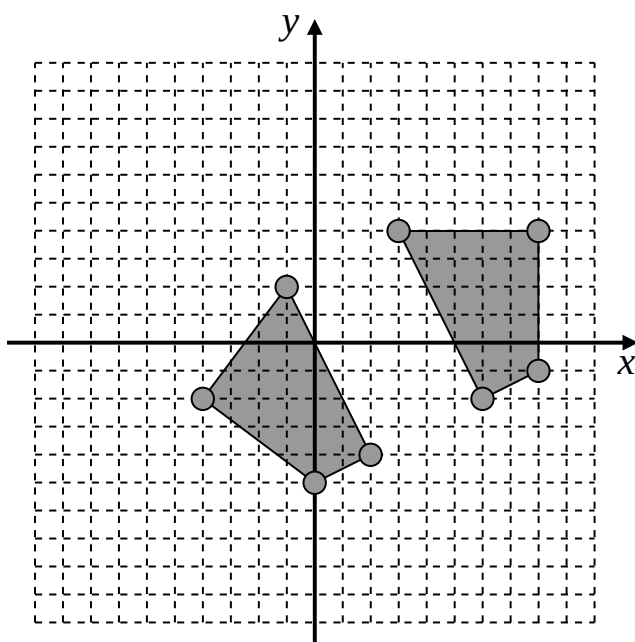
3.3 Exercise

Question 1



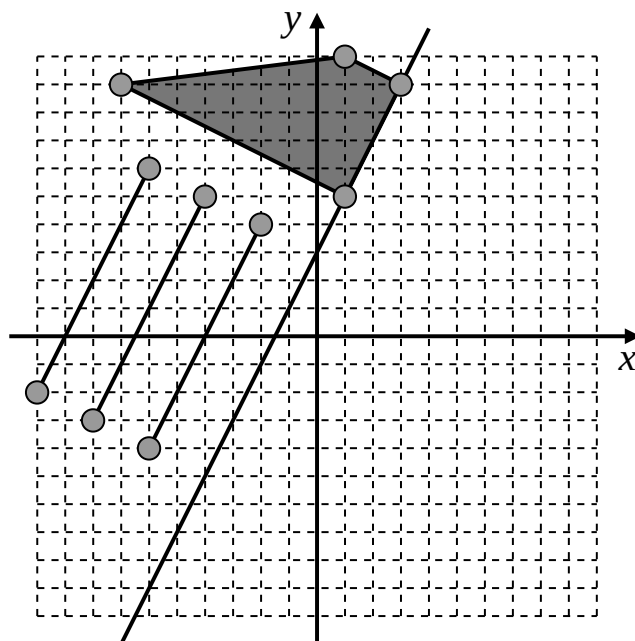
- (i) Reflect each point, line and shape in the mirror line.
- (ii) Write down the equation of the mirror line.

Question 2



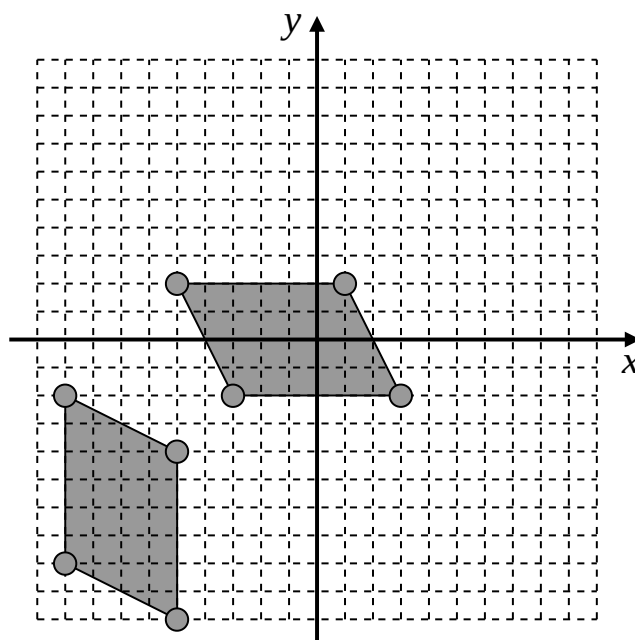
- (i) Draw in the mirror.
- (ii) Write down the equation of the mirror in the form $y = m x + c$

Question 3



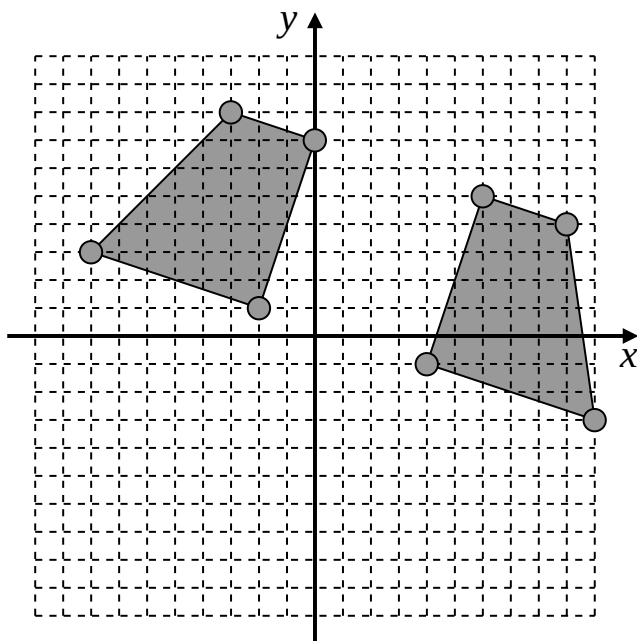
- (i) Reflect each point, line and shape in the mirror line.
- (ii) Write down the equation of the mirror line.

Question 4



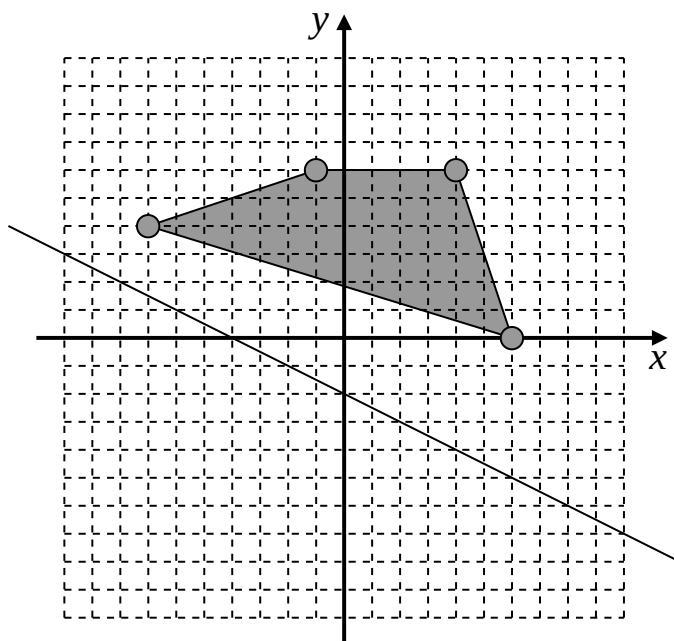
- (i) Draw in the mirror.
- (ii) Write down the equation of the mirror in the form $y = m x + c$.

Question 5



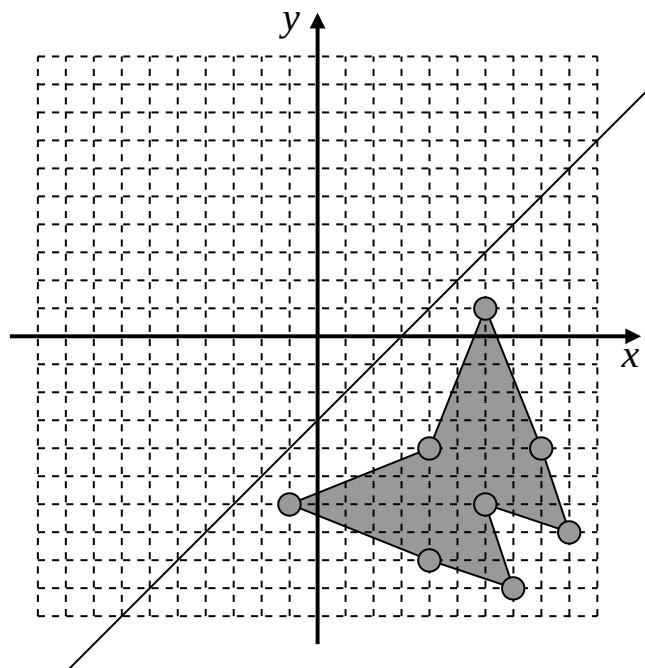
- (i) Draw in the mirror.
- (ii) Write down the equation of the mirror in the form $y = m x + c$.

Question 6



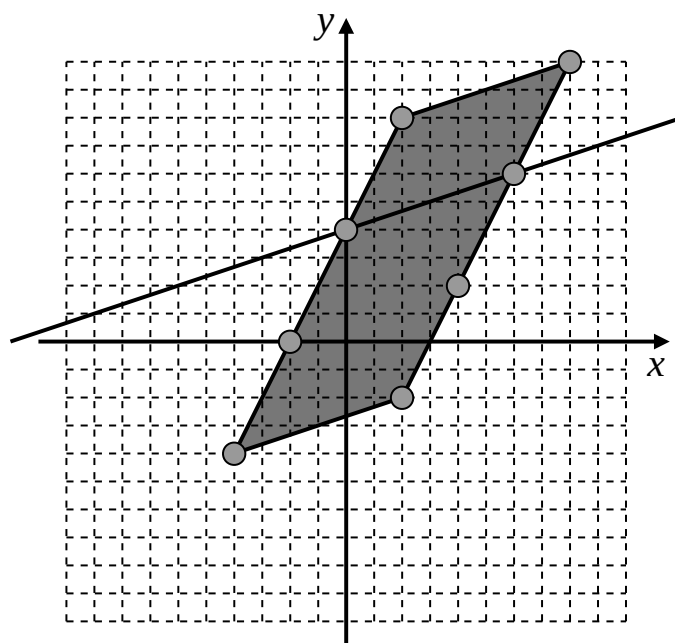
- (i) Reflect the shape in the mirror.
- (ii) Write down the equation of the mirror in the form $y = m x + c$.

Question 7



- (i) Reflect the shape in the mirror.
- (ii) Write down the equation of the mirror.

Question 8



- (i) Reflect the shape in the mirror.
- (ii) Write down the equation of the mirror.

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Teachers may obtain detailed worked solutions to the exercises by email from mhh@shrewsbury.org.uk