



Lines, shapes and coordinates

- Identifying parallel and perpendicular lines
- Classifying quadrilaterals by their geometric properties
- Identifying alternate and corresponding angles
- Solving angle problems involving parallel lines

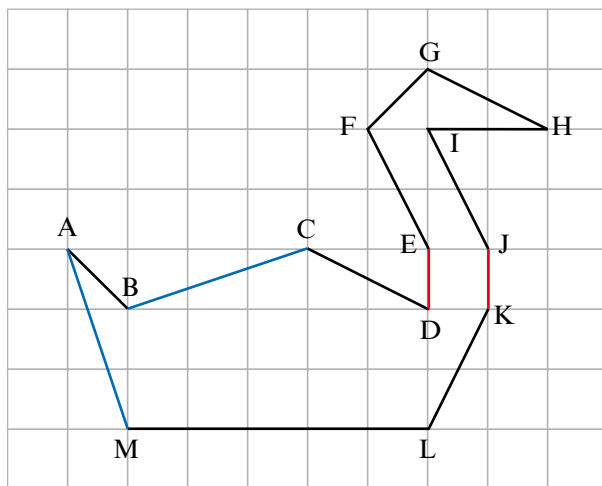
Keywords

You should know

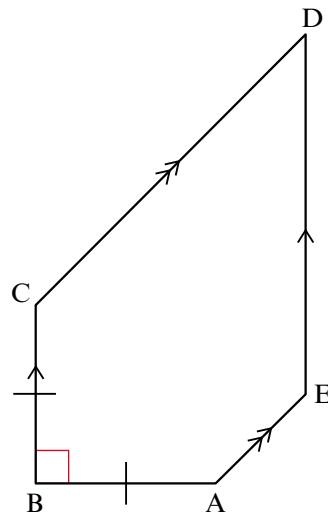
explanation 1a

explanation 1b

- 1 a** In the diagram, lines DE and JK are parallel.
Write down all the other pairs of parallel lines.
- b** Lines AM and BC are perpendicular.
Write down all the other pairs of perpendicular lines.



- 2** The diagram shows the pentagon ABCDE.
- a** What do the line markings on sides AB and BC tell you about these sides?
- b** What do the arrow markings on sides BC and DE tell you?
- c**
- i** What is the size of $\angle ABC$?
 - ii** What does this tell you about the sides AB and BC?
- d**
- i** What do the arrow markings on sides CD and AE tell you?
 - ii** Why has a double arrow sign been used instead of a single arrow sign?



explanation 2a

explanation 2b

3 Match the quadrilaterals to their names.

Trapezium

Square

Kite

Isosceles trapezium

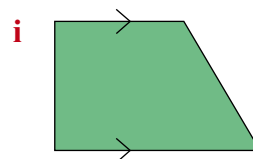
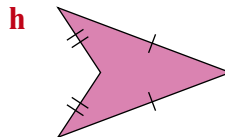
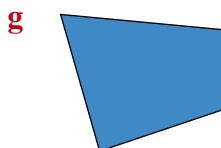
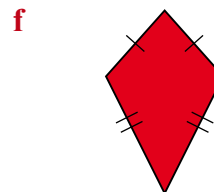
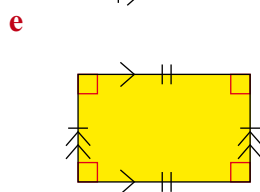
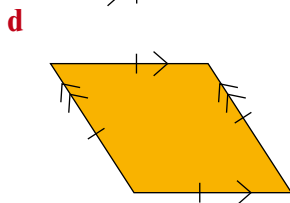
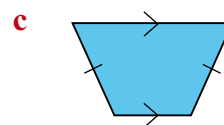
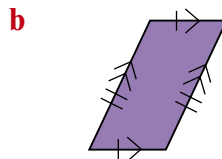
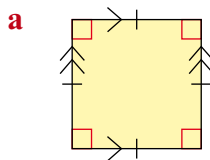
Rhombus

Rectangle

Parallelogram

Arrowhead

Irregular quadrilateral



4 Look at the quadrilaterals from question 3.

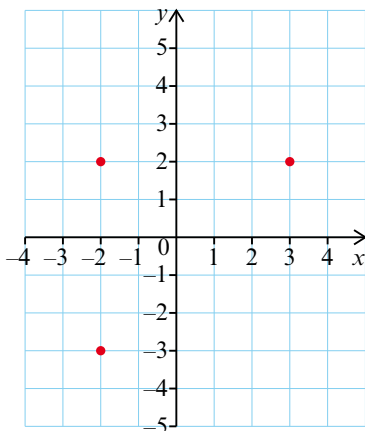
Which quadrilaterals have each property?

- a** There are two pairs of parallel sides.
- b** All angles are the same size.
- c** There is only one pair of sides that are the same length.
- d** Opposite angles are the same size.
- e** There is no pair of parallel sides.
- f** Opposite sides are the same length.
- g** There is only one pair of parallel sides.
- h** All sides are the same length.

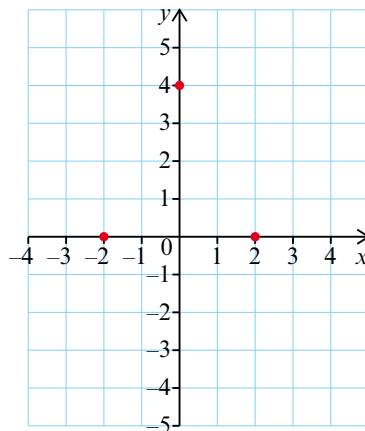
explanation 3

- 5** In each grid, three vertices of a quadrilateral are plotted. What are the coordinates of the fourth vertex?

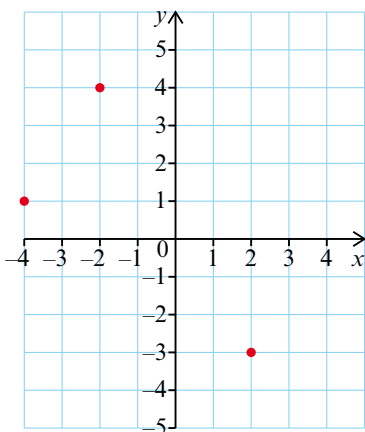
a A square



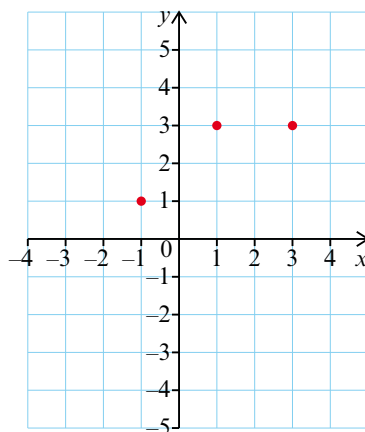
b A rhombus



c A rectangle



d A parallelogram

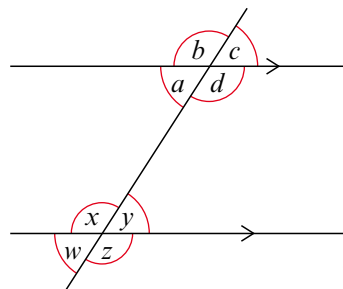


explanation 4a

explanation 4b

- *6** The diagram shows two parallel lines intersected by another straight line.

- a** Which angle is alternate to a ?
- b** Which angle is corresponding to d ?
- c** Which angle is corresponding to a ?
- d** Which angle is vertically opposite y ?
- e** Which angles are on a straight line with b ?



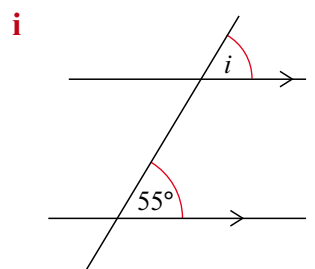
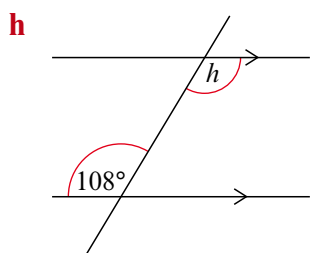
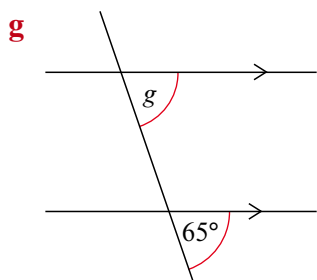
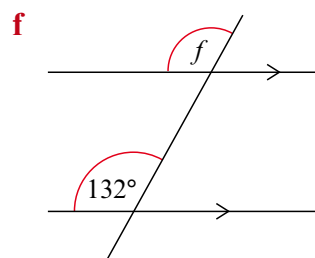
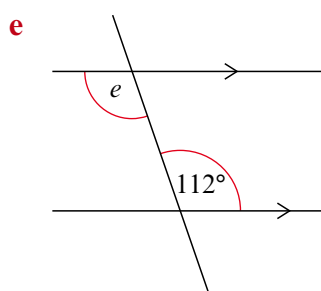
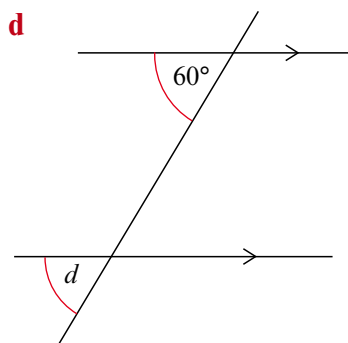
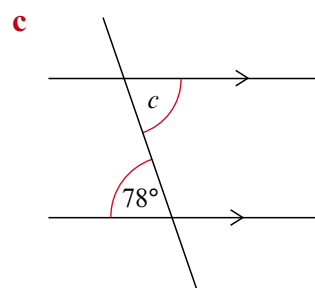
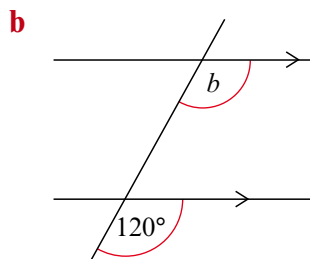
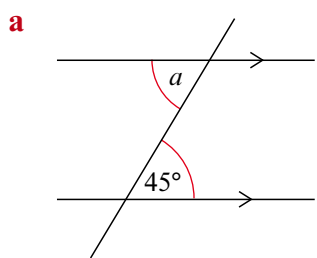
***7** Look at the diagram in question 6.

- a** Which angle rule links angles d and x ?
- b** Which angle rule links angles a and w ?
- c** Which angle rule links angles d and b ?
- d** Which angle rule links angles w and z ?
- e** Which angle rule links angles y and c ?



explanation 5

***8** Calculate the size of each lettered angle. Give reasons for your answers.



explanation 6a

explanation 6b

***9** Calculate the size of each lettered angle. Give reasons for your answers.

