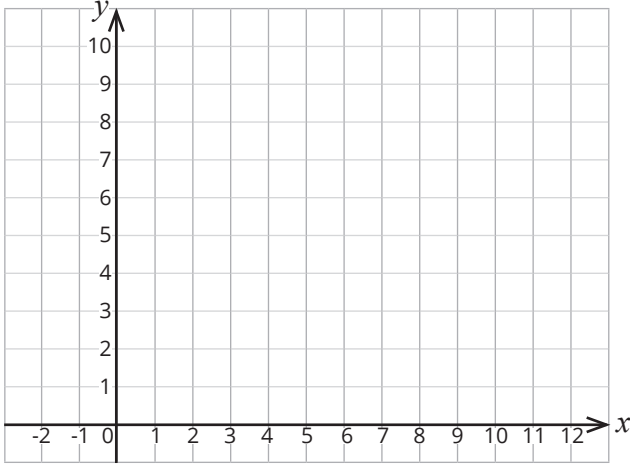# Coordinate Grids Problem Solving

1. Three points are plotted on a coordinate grid at (-1, 3), (3, 8) and (7, 3). A fourth point is added to the grid. Write down the coordinates for this point so that the resulting shape forms a parallelogram.

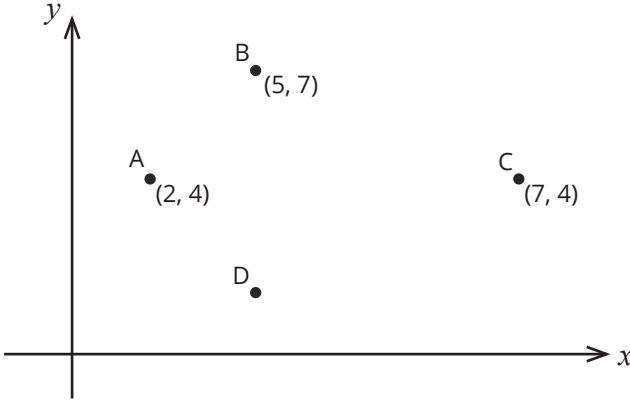2. ABCD is a kite. Write down the coordinates of vertex D.

Diagram not drawn to scale.
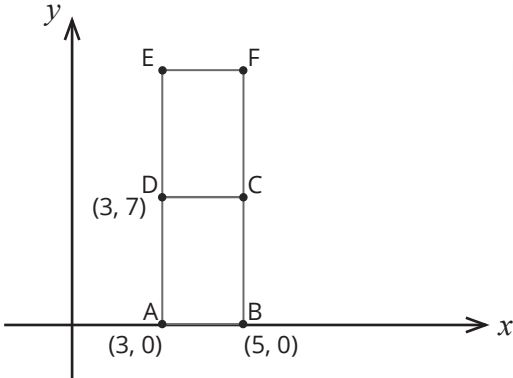
3. The diagram shows two congruent rectangles.

Diagram not drawn to scale.

    a. Find the coordinates of point E.

    b. Find the coordinates of point F.

4. The diagram shows two congruent squares. H is the centroid (the very middle) of the top square.
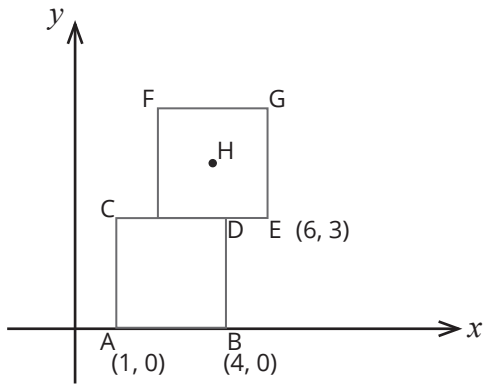

Diagram not drawn to scale.

   a. Find the coordinates of point G.

   b. Find the coordinates of point F.

   c. Find the coordinates of point H.

5. The point A is reflected in the line $y = x$. Its image is A'.
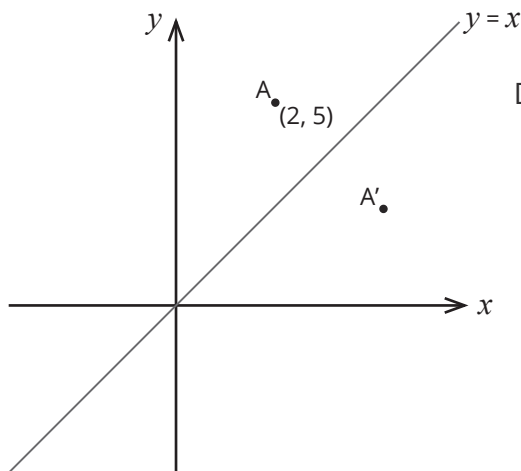   What are the coordinates of point A' ?

Diagram not drawn to scale.

6. The diagram shows two congruent triangles. Find the coordinates of point A.
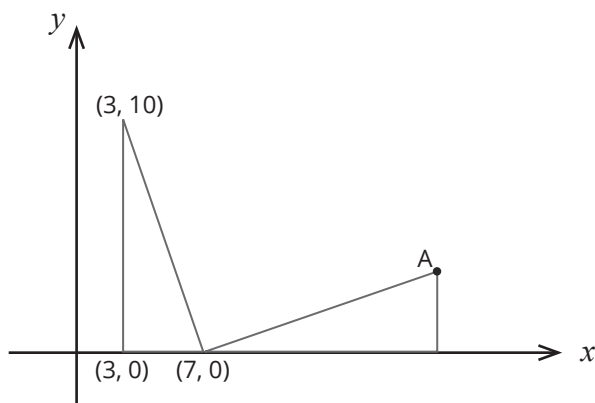

Diagram not drawn to scale.

7. Point B is $\frac{1}{3}$ of the way along the line segment AC. Find the coordinates of B.
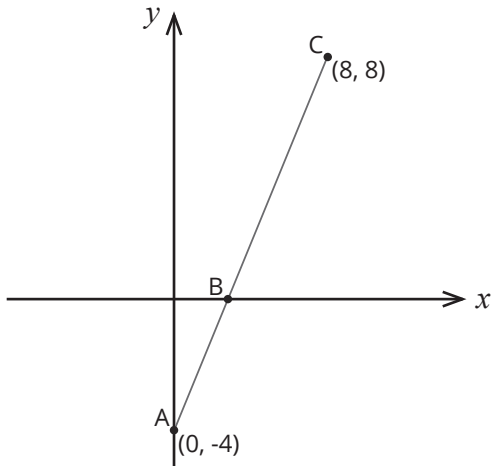

Diagram not drawn to scale.

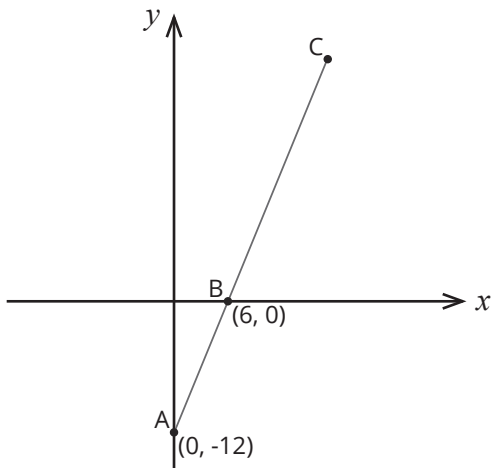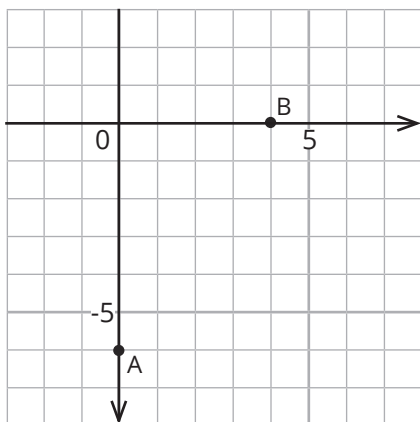8. Point B is $\frac{2}{5}$ of the way along the line segment AC. Find the coordinates of C.

Diagram not drawn to scale.

9. The diagram shows points A and B.
   Point C is twice as far from B as A is from B and lies on the straight line which passes through A and B.
   What could be the coordinates of point C?

10. The diagram shows 2 congruent rectangles. The length of each rectangle is double its width. Find the coordinates of A.
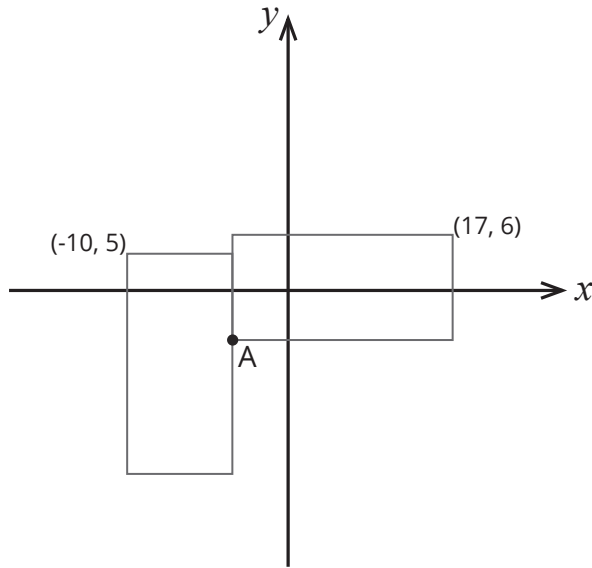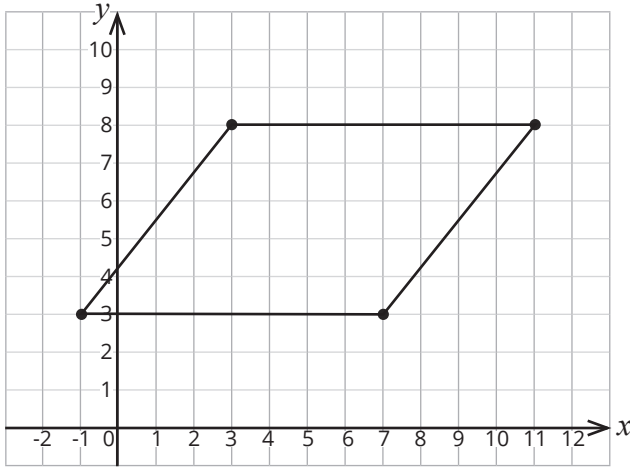
Diagram not drawn to scale.

11. Two opposite vertices of a square lie at the points (-7, -5) and (3, 3). Find the coordinates of the other two vertices.

12. Points A, B and C are collinear. Their respective coordinates are (1, 2), (5, 12) and (9, c). Work out the value of c.

13. Points A, B and C are collinear. Their respective coordinates are (-5, 9), (b, 5) and (4, -3). Work out the value of b.

Coordinate Grids Problem Solving **Answers**

1. Three points are plotted on a coordinate grid at (-1, 3), (3, 8) and (7, 3). A fourth point is added to the grid. Write down the coordinates for this point so that the resulting shape forms a parallelogram.

   (11, 8)

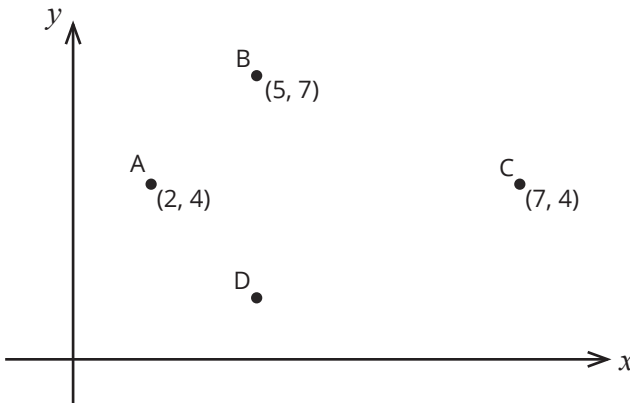2. ABCD is a kite. Write down the coordinates of vertex D.

   Diagram not drawn to scale.

   (5, 1)
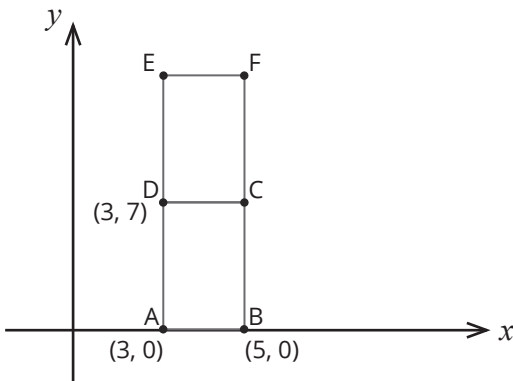
3. The diagram shows two congruent rectangles.

   Diagram not drawn to scale.

   a. Find the coordinates of point E.

   (3, 14)

   b. Find the coordinates of point F.

   (5, 14)

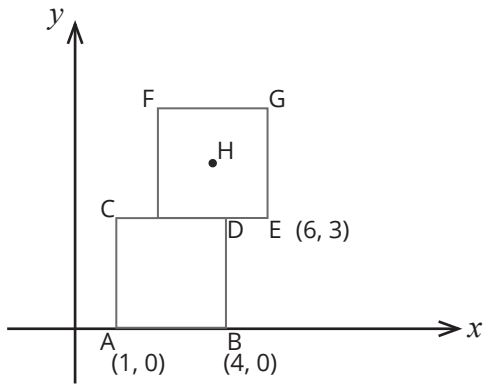4. The diagram shows two congruent squares. H is the centroid (the very middle) of the top square.

Diagram not drawn to scale.

a. Find the coordinates of point G.

(6, 6)

b. Find the coordinates of point F.

(3, 6)

c. Find the coordinates of point H.

(4.5, 4.5)

5. The point A is reflected in the line $y = x$. Its image is A'.
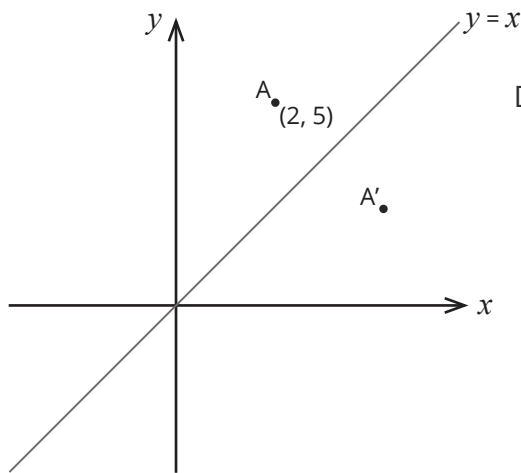What are the coordinates of point A' ?

Diagram not drawn to scale.

(5, 2)

6. The diagram shows two congruent triangles. Find the coordinates of point A.
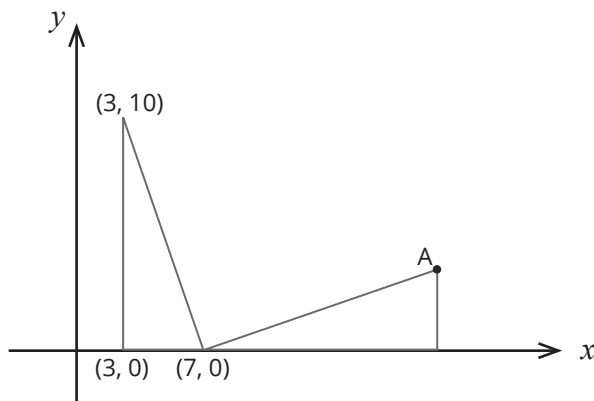

Diagram not drawn to scale.

(17, 4)

7. Point B is $\frac{1}{3}$ of the way along the line segment AC. Find the coordinates of B.
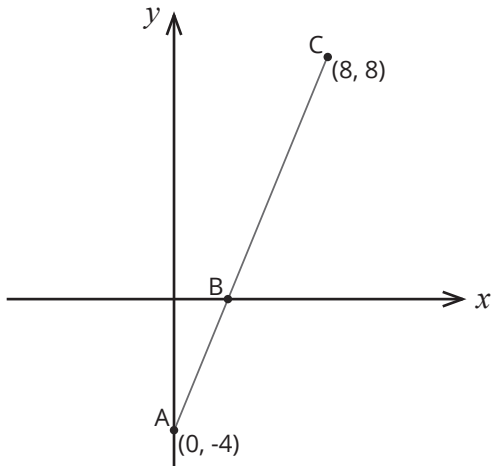

Diagram not drawn to scale.

($2\frac{2}{3}$, 0)

8. Point B is $\frac{2}{5}$ of the way along the line segment AC. Find the coordinates of C.
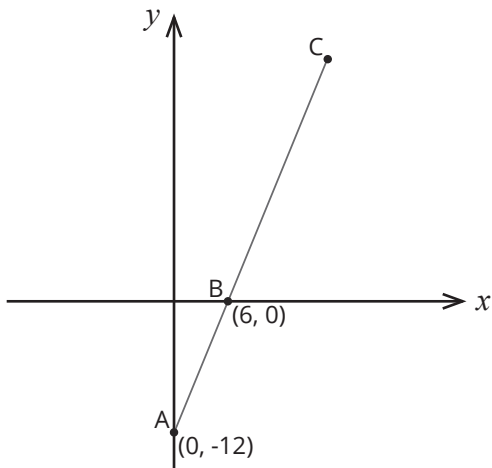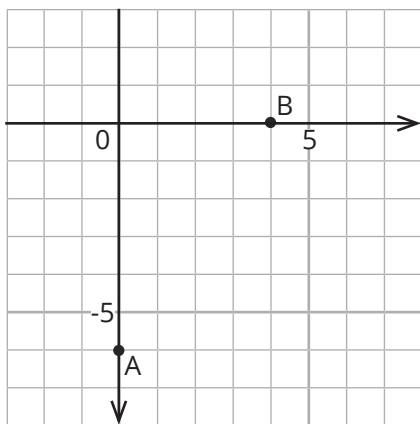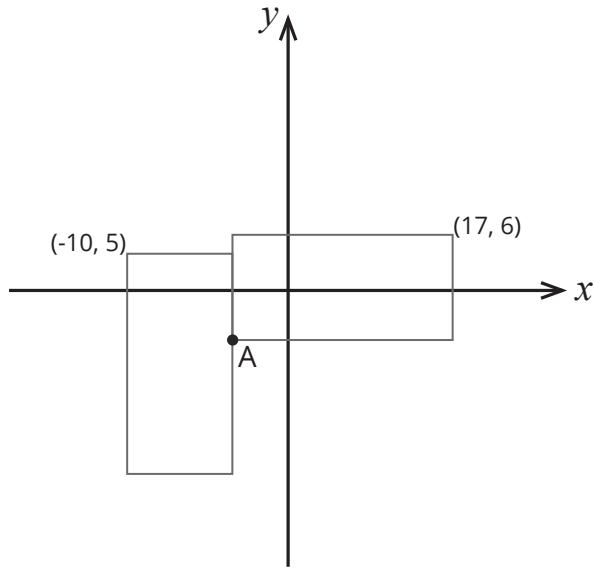

Diagram not drawn to scale.

(15, 18)

9. The diagram shows points A and B.
   Point C is twice as far from B as A is from B and lies on the straight line which passes through A and B.
   What could be the coordinates of point C?

(12, 12) or (-4, -12)

10. The diagram shows 2 congruent rectangles. The length of each rectangle is double its width. Find the coordinates of A.

length + width = 17 + 10 = 27 units

27 ÷ 3 = 9 units

width = 9 units

length = 18 units

17 − 18 = -1

6 − 9 = -3

Coordinates of A = (-1, -3)

11. Two opposite vertices of a square lie at the points (-7, -5) and (3, 3). Find the coordinates of the other two vertices.

    (-7, 3) and (3, -5)

12. Points A, B and C are collinear. Their respective coordinates are (1, 2), (5, 12) and (9, c). Work out the value of c.

    c **= 22**

13. Points A, B and C are collinear. Their respective coordinates are (-5, 9), (b, 5) and (4, -3). Work out the value of b.

    b **= -2**