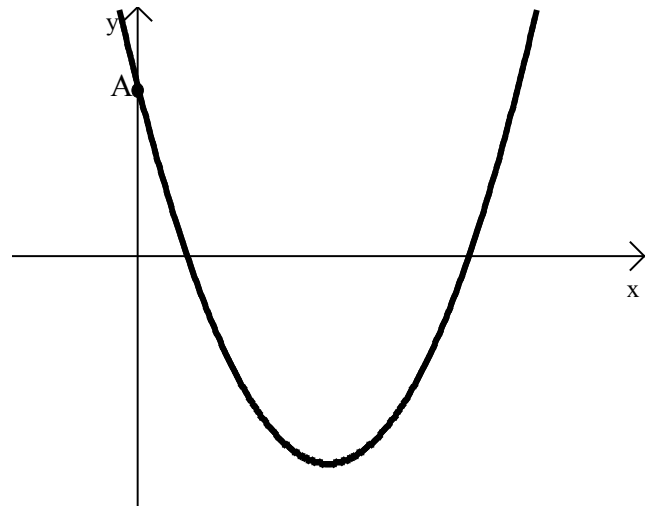# Parabolas 2

1. The equation of the parabola opposite is

$$y = (x - 3)^2 - 5$$
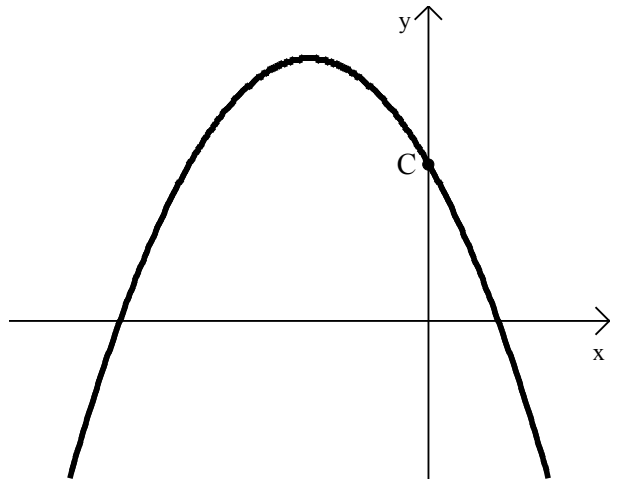
(a) State the coordinates of the minimum turning point of the parabola.

(b) State the equation of the axis of symmetry of the parabola.

(c) Find the coordinates of A.

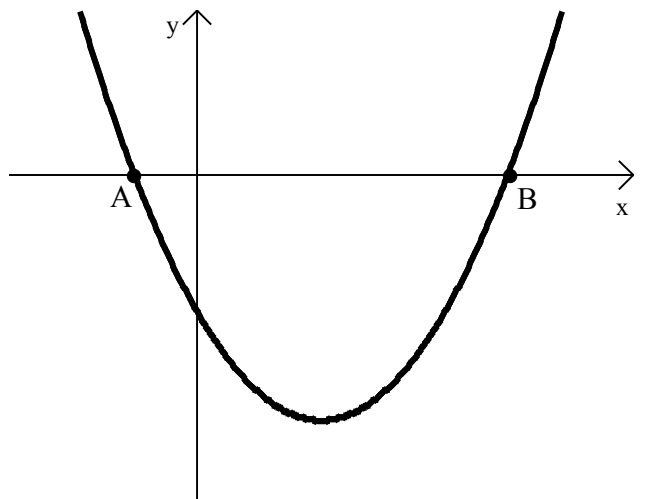2. The equation of the parabola opposite is

$$y = 10 - (x + 2)^2$$

(a) State the coordinates of the maximum turning point of the parabola.

(b) State the equation of the axis of symmetry of the parabola.

(c) Find the coordinates of C.

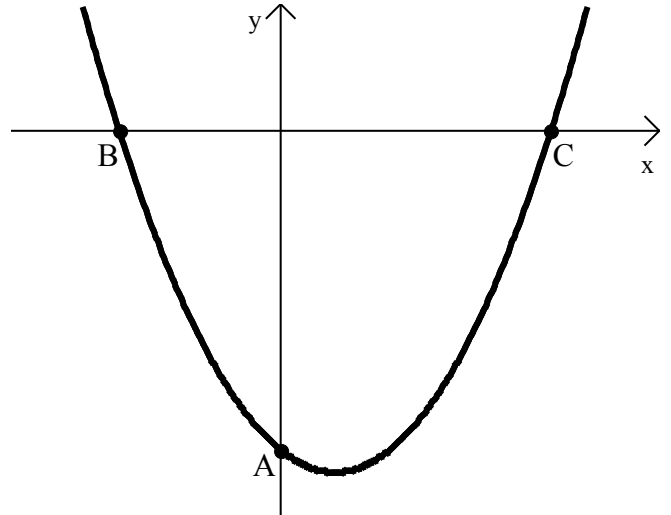3. The equation of the parabola opposite is

$$y = (x - 2)^2 - 9$$

(a) State the coordinates of the minimum turning point of the parabola.

(b) State the equation of the axis of symmetry of the parabola.

(c) Find the coordinates of A and B.

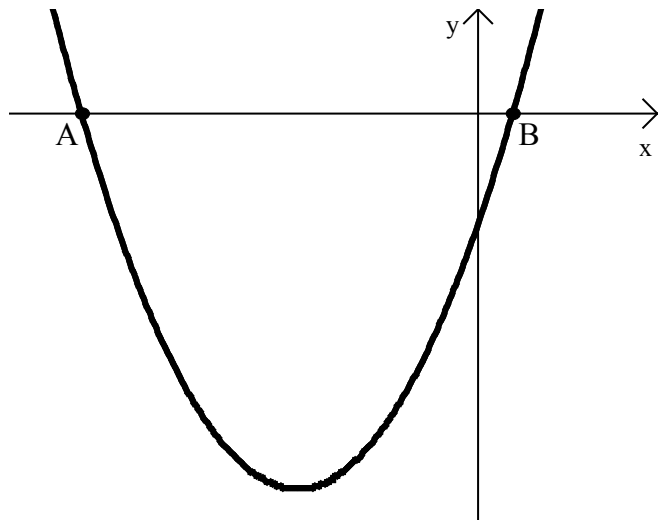4. The equation of the parabola opposite is

$$y = (x - 1)^2 - 16$$

(a) State the coordinates of the minimum turning point of the parabola.

(b) Find the coordinates of A.

(c) Find the coordinates of B and C.

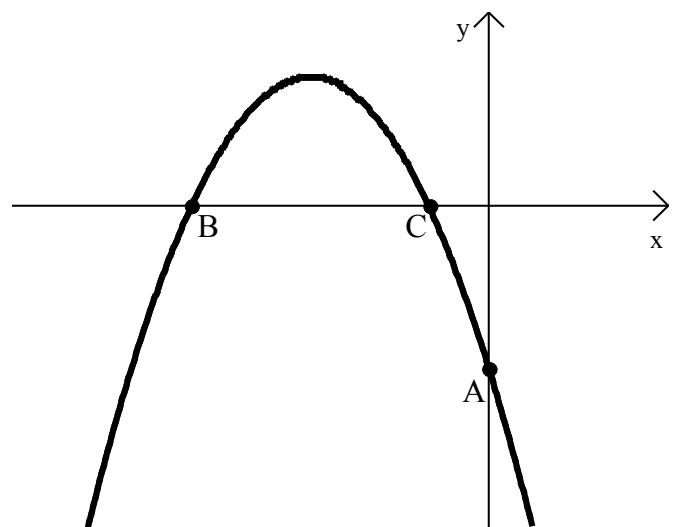5. The equation of the parabola opposite is

$$y = (x + 5)^2 - 36$$

(a) State the minimum turning point of the parabola.

(b) Write down the equation of the axis of symmetry of the parabola.

(c) A has coordinates (-11,0). State the coordinates of B.
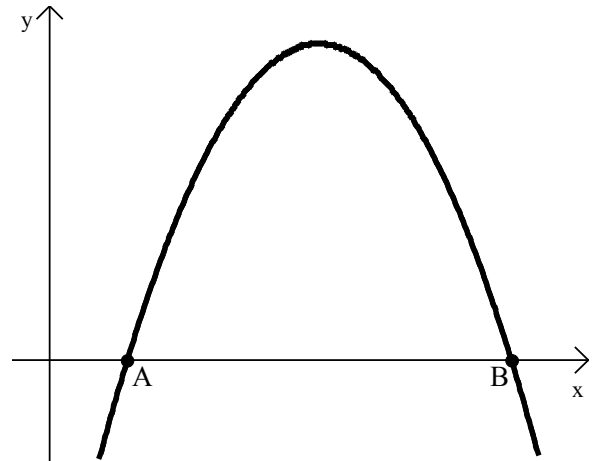
6. The parabola opposite has equation

$$y = 4 - (x + 3)^2$$

(a) Write down the coordinates of the maximum turning point of the parabola.

(b) Find the coordinates of A.

(c) Find the coordinates of B and C.

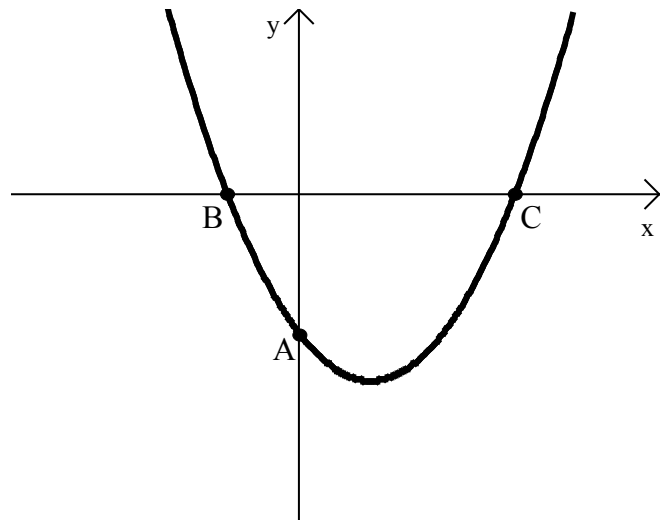7. The equation of the parabola below is

$y = 25 - (x - 7)^2$

(a) Write down the coordinates of the maximum turning point of the parabola.

(b) State the equation of the axis of symmetry of the parabola.

(c) Find the coordinates of A and B.

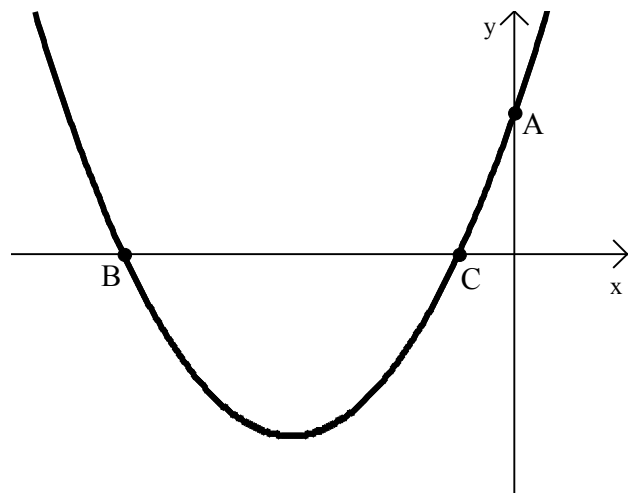
8. The parabola opposite has equation

$y = (x - 1)^2 - 4$

(a) State the coordinates of the minimum turning point of the parabola.

(b) State the equation of the axis of symmetry of the parabola.

(c) Find the coordinates of A.

(d) Find the coordinates of B and C.
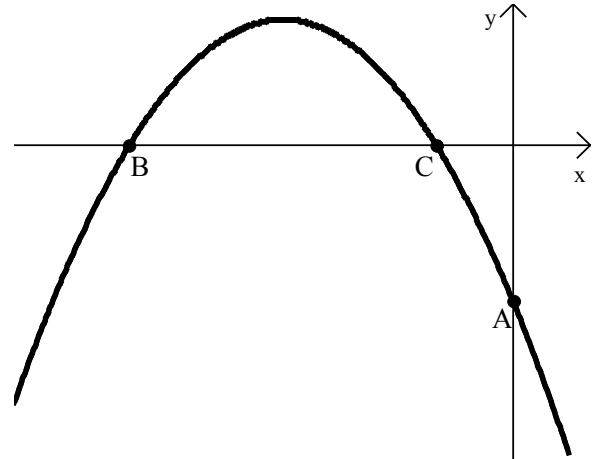

9. The parabola opposite has equation

$y = (x + 4)^2 - 9$

(a) State the coordinates of the minimum turning point of the parabola.

(b) Write down the equation of the axis of symmetry of the parabola.

(c) State the coordinates of A.

(d) B has coordinates (-7,0). Find the coordinates of C.

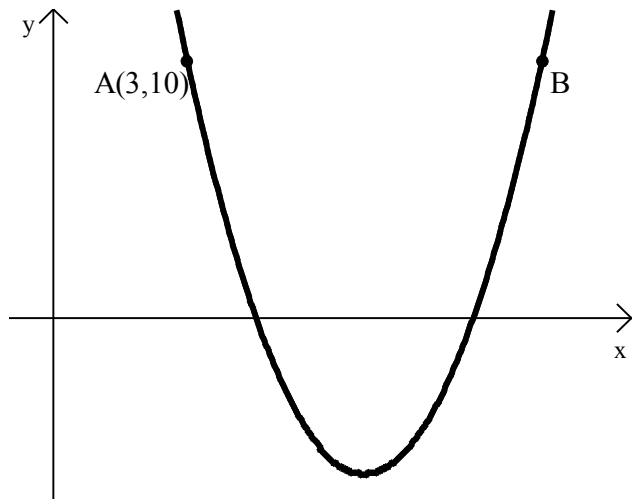10. The equation of the parabola opposite is

$$y = 16 - (x + 6)^2$$

(a) Write down the coordinates of the maximum turning point of the parabola.

(b) Find the coordinates of A.

(c) Find the length of BC.

11. The parabola opposite has equation
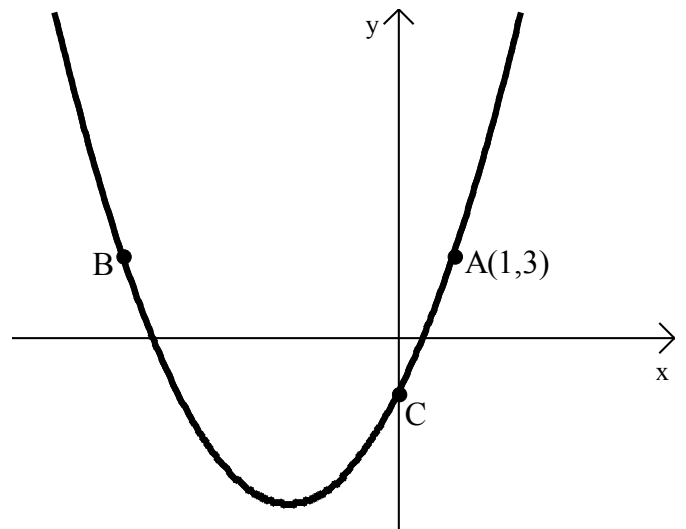
$$y = (x - 7)^2 - 6$$

(a) Write down the coordinates of the turning point of the parabola.

(b) Write down the equation of the axis of symmetry of the parabola.

(c) A and B have the same y-coordinate. If A has coordinates (3,10), write down the coordinates of B.

12. The parabola shown has equation

$$y = (x + 2)^2 - 6$$

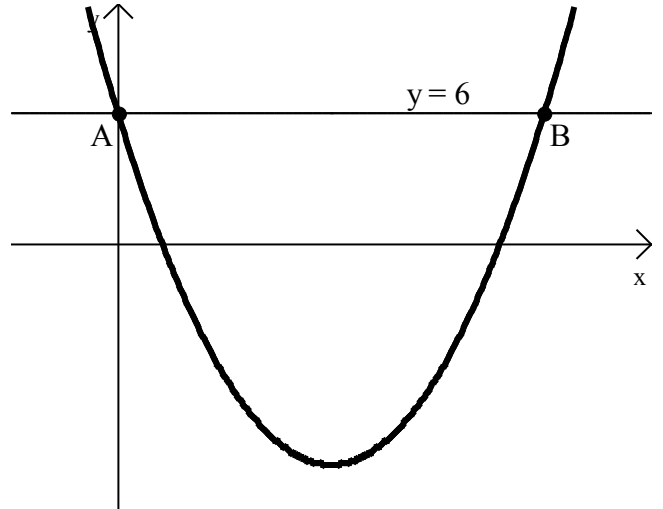(a) Write down the coordinates of the turning point of the parabola.

(b) Write down the equation of the axis of symmetry of the parabola.

(c) A has coordinates (1 ,3) and B has coordinates (p,3). Find the value of p.

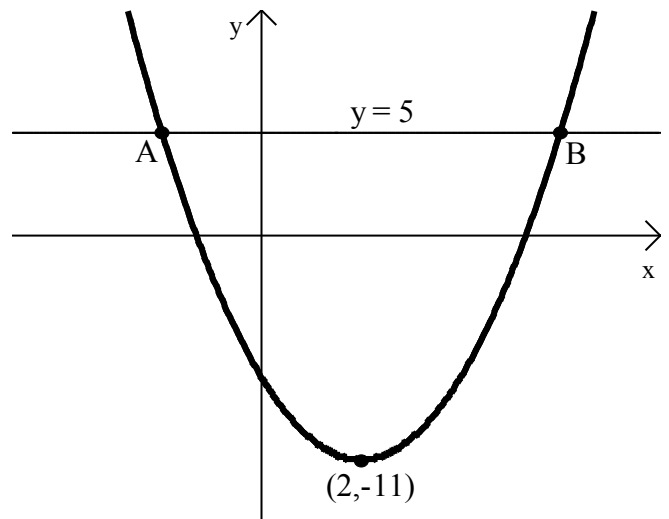(d) State the coordinates of C.

13. The parabola opposite has equation

$y = (x - 4)^2 - 10$

(a) Write down the coordinates of the minimum turning point

(b) Write down the equation of the axis of symmetry of the parabola.

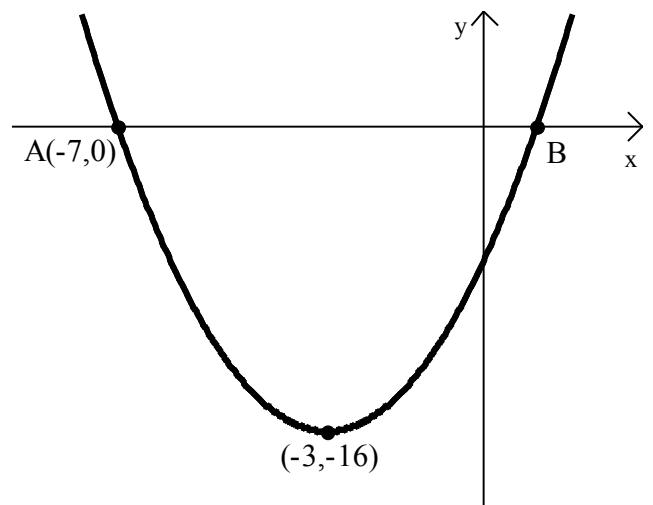(c) A and B both lie on the line $y = 6$. Find the coordinates of B.

14. The diagram opposite shows the graph of $y = (x + a)^2 + b$.

(a) Find the values of a and b.

(b) State the equation of the axis of symmetry.

(c) A and B lie on the line $y = 5$. A has coordinates (-2,5). Find the coordinates of B.

15. The parabola opposite has equation $y = (x + a)^2 + b$.

(a) Find the values of a and b.

(b) State the equation of the axis of symmetry of the parabola.

(b) A has coordinates (-7,0). Find The coordinates of B.

16. The parabola opposite has equation
    $y = (x + a)^2 + b$.

    (a) Find the values of a and b.

    (b) Write down the equation of the
        axis of symmetry of the parabola.

    (c) Find the coordinates of A.

    (d) Find the length of BC.

B

C x

A
(2,-36)
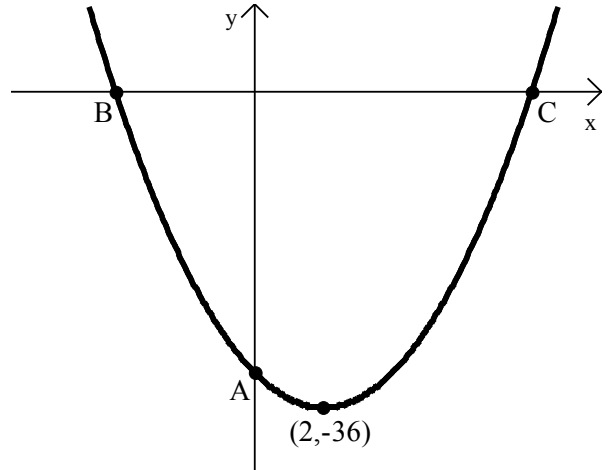
17. The parabola shown has equation
    $y = b - (x + a)^2$.

    (a) Write down the values of a and b.

    (b) State the equation of the axis of
        symmetry of the parabola.

    (c) A has coordinates (3,0). Find the
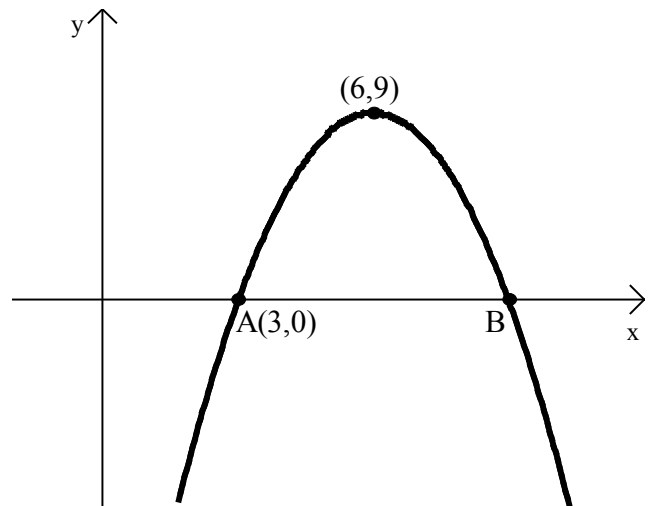   coordinates of B.

(6,9)

A(3,0)   B   x

18. The parabola shown has equation
    $y = b - (x + a)^2$.

    (a) Find a and b.

    (b) Write down the equation of the
        axis of symmetry.

    (c) A and B both lie on the line $y = 4$.
        A has coordinates (-5,4). Find the
        coordinates of B.

    (d) Write down the coordinates of C.

(-2,13)

C

A(-5,4)   B   y = 4

x