

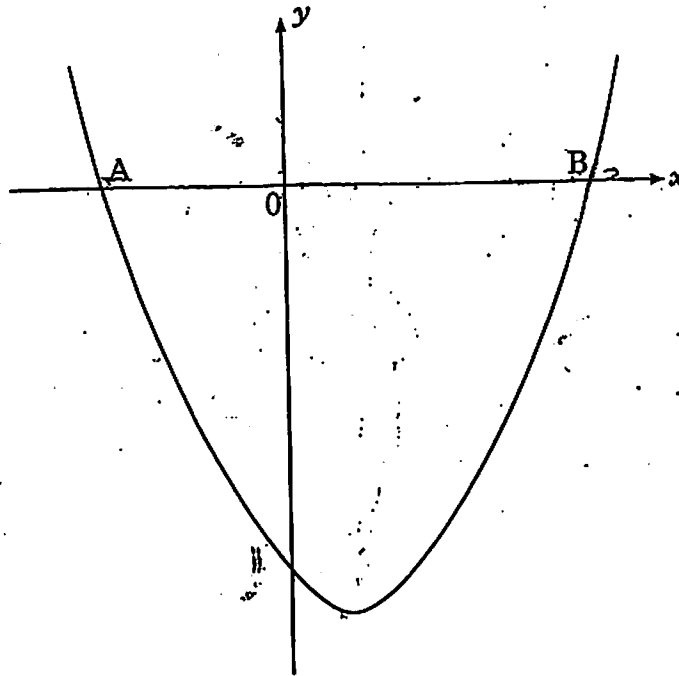
Quadratic functions Int 2 PP 2001 -2008

2002 P1

Marks

A

6.



The equation of the parabola in the above diagram is

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

- (a) State the coordinates of the minimum turning point of the parabola. 2
- (b) State the equation of the axis of symmetry of the parabola. 1
- (c) The parabola cuts the x -axis at A and B. Find the length of AB. 3

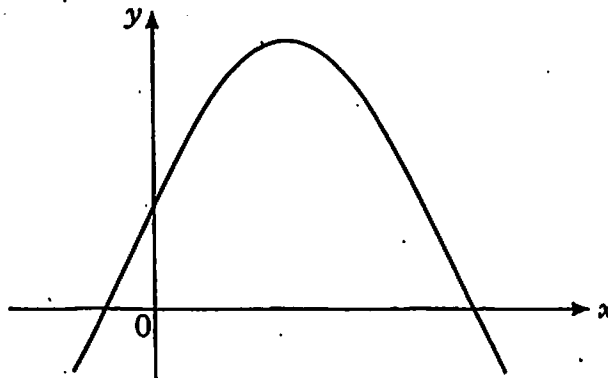
2003 P1

B

- (b) Hence write down the roots of the equation

$$7 + 6x - x^2 = 0.$$

- (c) The graph of $y = 7 + 6x - x^2$ is shown in the diagram. 1



Find the coordinates of the turning point. 3

Quadratic functions

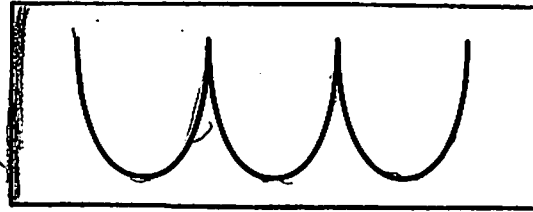
Int 2 PP 2001 -2008

C

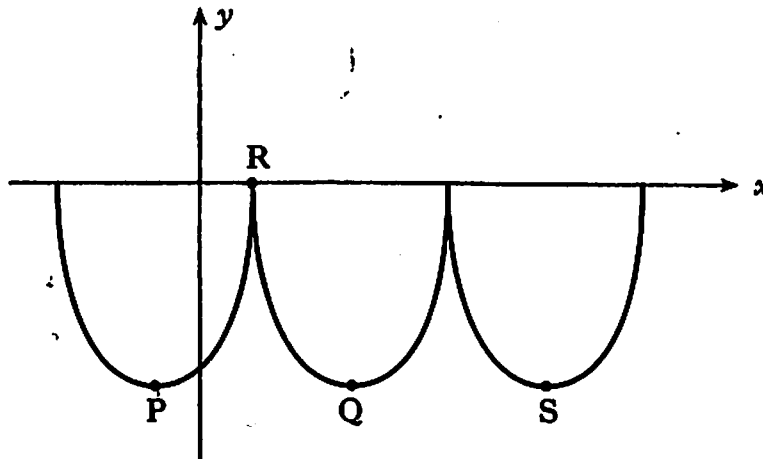
2004 P1

Marks

5. William Watson's Fast Foods use a logo based on parts of three identical parabolas.



This logo is represented on the diagram below.



The first parabola has turning point P and equation $y = (x + 2)^2 - 16$.

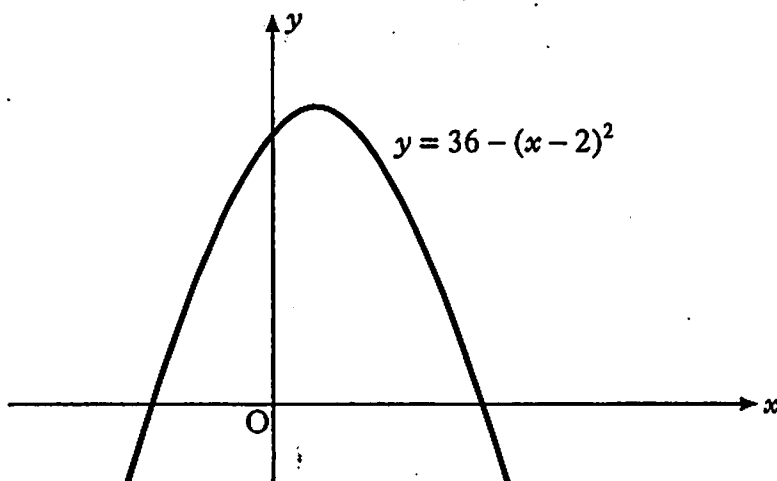
- (a) State the coordinates of P. 2
- (b) If R is the point (2, 0), find the coordinates of Q, the minimum turning point of the second parabola. 1
- (c) Find the equation of the parabola with turning point S. 2

Quadratic functions Int 2 PP 2001 -2008

2005 P1

Marks

9. The diagram below shows part of the graph of $y = 36 - (x - 2)^2$.



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

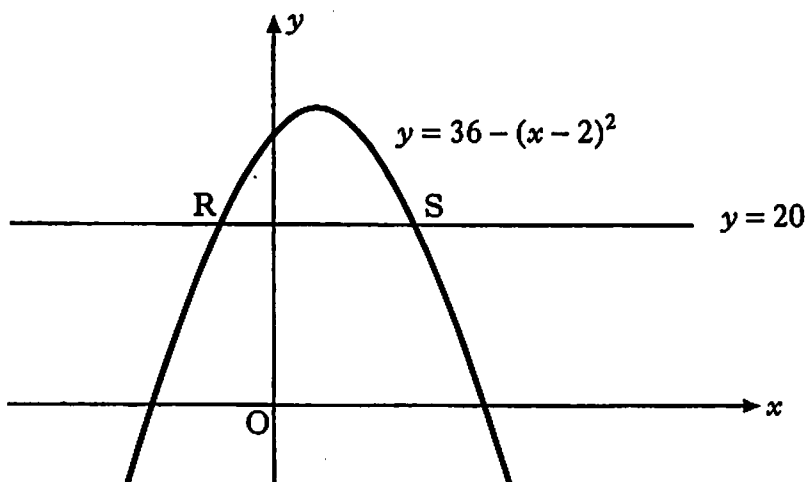
2

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

1

The line $y = 20$ is drawn.

It cuts the graph of $y = 36 - (x - 2)^2$ at R and S as shown below.



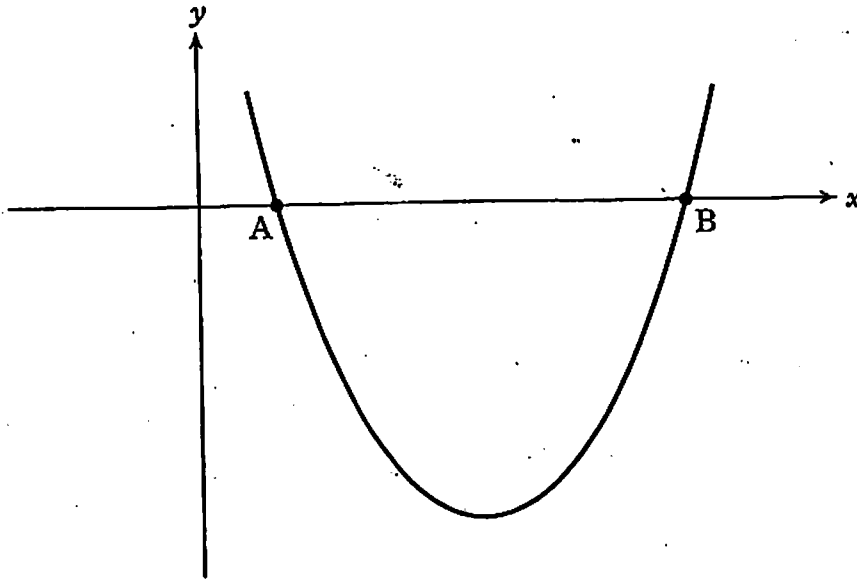
- (c) S is the point $(6, 20)$. Find the coordinates of R.

2

Quadratic functions Int 2 PP 2001 -2008

2006 P1

7.



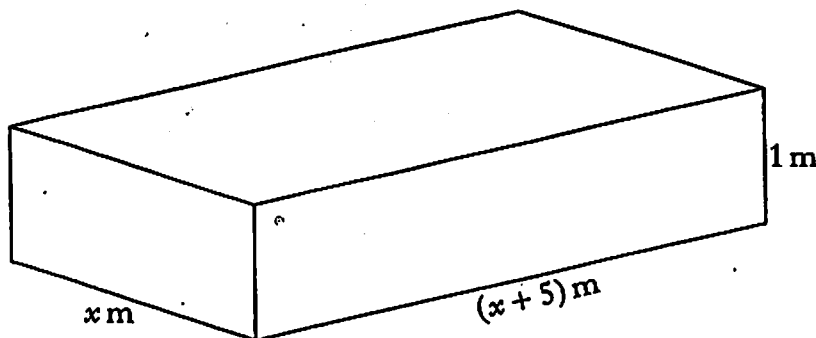
The equation of the parabola in the above diagram is

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

- (a) State the coordinates of the minimum turning point of the parabola. 2
- (b) State the equation of the axis of symmetry of the parabola. 1
- (c) A is the point (1, 0). State the coordinates of B. 1

2006 P2

11. A cuboid is shown below.



It has length $(x + 5)$ metres, breadth x metres, height 1 metre and volume 24 cubic metres.

(a) Show that

$$x^2 + 5x - 24 = 0.$$

(b) Using the equation in part (a), find the breadth of the cuboid.

2

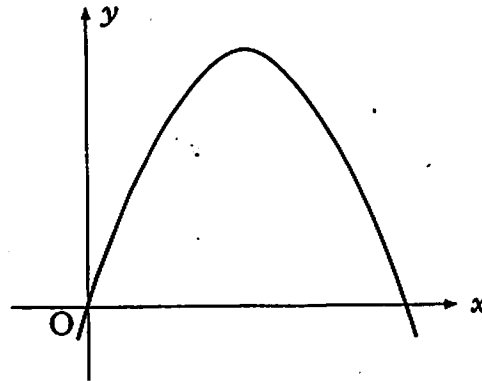
3

Quadratic functions Int 2 PP 2001 -2008

2007 P1

Marks

- G** 7. The graph shown below is part of the parabola with equation $y = 8x - x^2$.



- (a) By factorising $8x - x^2$, find the roots of the equation

$$8x - x^2 = 0.$$

2

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

1

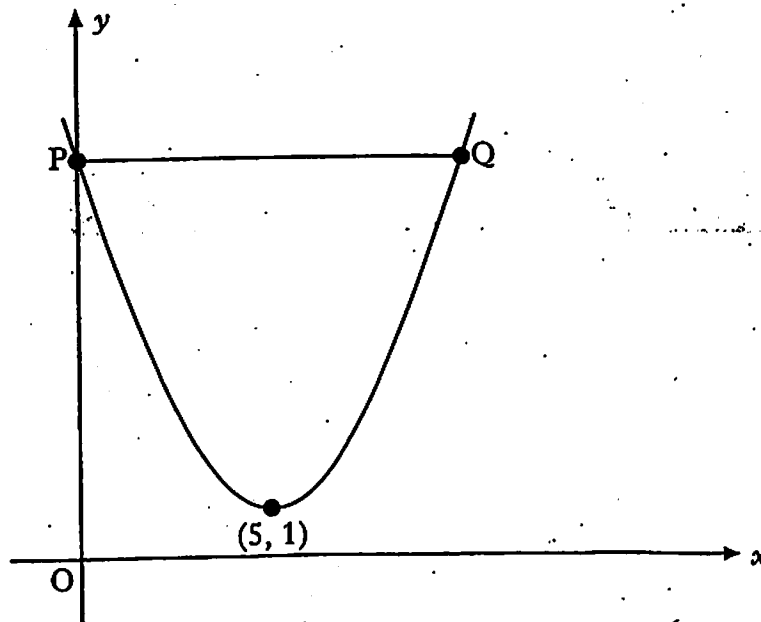
- (c) Find the coordinates of the turning point.

2

2008 P1

- H** 9. The graph below shows part of a parabola with equation of the form

$$y = (x + a)^2 + b.$$



- (a) State the values of a and b .

2

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

1

- (c) The line PQ is parallel to the x -axis.

Find the coordinates of points P and Q.

3