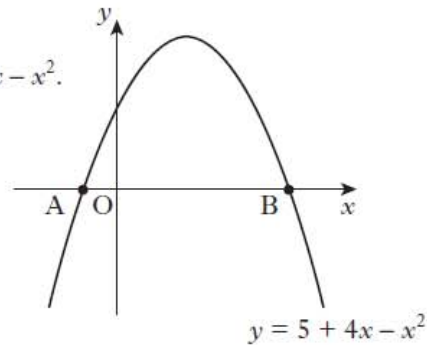


Credit Revision - Quadratic Graphs

2012 Paper 1

6. The diagram shows part of the graph of $y = 5 + 4x - x^2$.



A is the point $(-1, 0)$.

B is the point $(5, 0)$.

- (a) State the equation of the axis of symmetry of the graph.

2KU

- (b) Hence, find the maximum value of $y = 5 + 4x - x^2$.

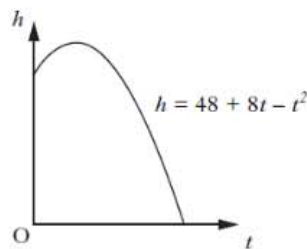
2KU

2011 Paper 2

13. The diagram shows the path of a flare after it is fired.

The height, h metres above sea level, of the flare is given by

$$h = 48 + 8t - t^2 \text{ where } t \text{ is the number of seconds after firing.}$$



4RE

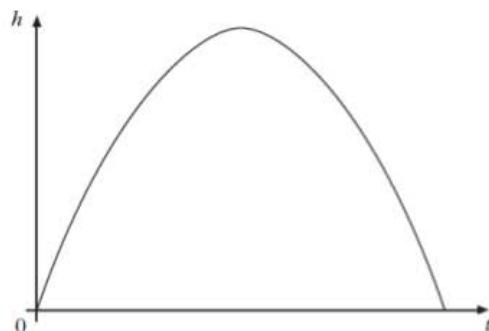
Calculate, **algebraically**, the time taken for the flare to enter the sea.

2009 Paper 1

10. The diagram below shows the path of a rocket which is fired into the air.

The height, h metres, of the rocket after t seconds is given by

$$h(t) = -2t(t - 14).$$



- (a) For how many seconds is the rocket in flight?

2RE

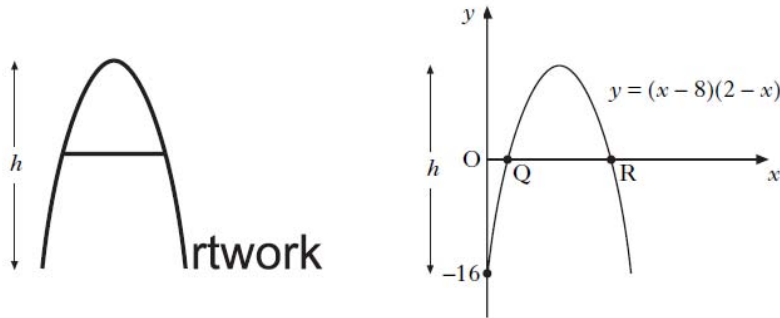
- (b) What is the maximum height reached by the rocket?

2RE

2008 Paper 1

8. The curved part of the letter A in the *Artwork* logo is in the shape of a parabola.

The equation of this parabola is $y = (x - 8)(2 - x)$.



(a) Write down the coordinates of Q and R.

2KU

(b) Calculate the height, h , of the letter A.

3RE

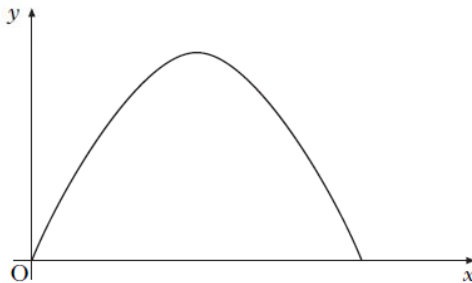
2007 Paper 2

13. The profit made by a publishing company of a magazine is calculated by the formula

$$y = 4x(140 - x),$$

where y is the profit (in pounds) and x is the selling price (in pence) of the magazine.

The graph below represents the profit y against the selling price x .



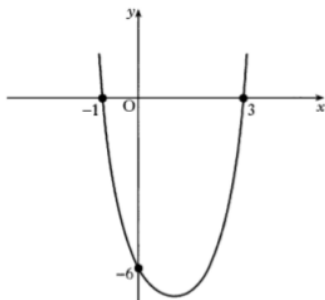
Find the maximum profit the company can make from the sale of the magazine.

4RE

2003 Paper 2

8. The diagram below shows part of the graph of a quadratic function, with equation of the form $y = k(x - a)(x - b)$.

The graph cuts the y -axis at $(0, -6)$ and the x -axis at $(-1, 0)$ and $(3, 0)$.



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

(b) Calculate the value of k .

(c) Find the coordinates of the minimum turning point of the function.

2KU

2KU

2RE