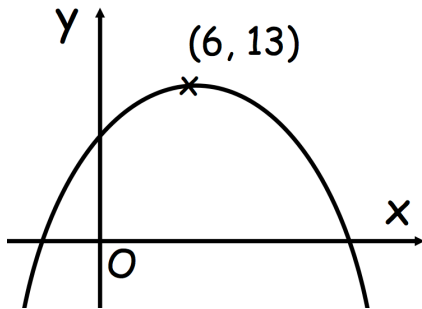




Here is a sketch of the quadratic graph with equation $y = f(x)$



The turning point of the curve is (6, 13)

Write down the coordinates of the turning point of $y = f(x + 4)$

Write down the coordinates of the turning point of $y = -f(x)$

A sequence u_1, u_2, u_3, \dots follows the iterative process

$$u_{n+1} = ku_n - 3$$

where k is a constant

Given $u_1 = 2$ and $u_3 = 17$

Find the possible values of k

The town Milton is 15 miles due East from the town Newtown.

A helicopter is on a bearing of 150° from Newtown and a bearing of 240° from Milton.

A helipad is 3 miles due South of Newtown.

Work out the shortest distance from the helicopter to the helipad.

