3.7) Recurrence relations

Worked example

Find the first five terms of the sequence:

$$u_{n+1} = 2u_n + 3, u_1 = 3$$

Your turn

Find the first five terms of the sequence:

$$u_{n+1} = 3u_n - 2, u_1 = 4$$

$4, 10, 28, 82, 244$

Worked example

A sequence $u_1, u_2, u_3, \ldots$ is defined by

$$u_1 = 4$$

$$u_{n+1} = pu_n + q, n \geq 1$$

Given that $u_2 = 5$ and $u_3 = 7$, find the values of p and q

Your turn

A sequence $u_1, u_2, u_3, \ldots$ is defined by

$$u_1 = 5$$

$$u_{n+1} = pu_n + q, n \geq 1$$

Given that $u_2 = 13$ and $u_3 = 37$, find the values of p and q

$$p = 3, q = -2$$