

Решение рекуррентного уравнения $x_{n+2} = 5x_{n+1} + 6x_n$. $x_0 = 1, x_1 = 2$

> **restart;**

> **eq:=y^2-5*y-6;**

$$eq := y^2 - 5y - 6$$

> **solve(eq);**

$$6, -1$$

> **Z:=c1*6^n+c2*(-1)^n;**

$$Z := c1 6^n + c2 (-1)^n$$

> **eq1:=1=subs(n=0,Z);**

$$eq1 := 1 = c1 + c2$$

> **eq2:=2=subs(n=1,Z);**

$$eq2 := 2 = 6c1 - c2$$

> **solve({eq1,eq2});assign(%);**

$$\left\{ c1 = \frac{3}{7}, c2 = \frac{4}{7} \right\}$$

> **Z;**

$$\frac{3 \cdot 6^n}{7} + \frac{4 \cdot (-1)^n}{7}$$