$$F(x) = -6(1-x)/\sqrt{5}\left(\frac{1/(-1+\sqrt{5})}{1-2x/(-1+\sqrt{5})} + \frac{-1/(1+\sqrt{5})}{1-2x/(-1-\sqrt{5})}\right)$$

$$F(x) = \sum_{n>=1} f(n)x^n$$

$$f(3)x^2 + f(4)x^3 + f(5)x^4 + \ldots = (F(x) - 2x^2 - x)/x$$

$$f(2)x^2 + f(3)x^3 + f(4)x^4 + \ldots = F(x) - x$$

$$f(1)x^2 + f(2)x^3 + f(3)x^4 + \ldots = xF(x)$$

$$F(x) = \frac{x(1+x)}{1-x-x^2} = \frac{x}{1-x-x^2} + \frac{x^2}{1-x-x^2}$$

$$G(x) = \sum_{n>=0} g(n)x^n = \frac{1}{1-x-x^2}$$

$$f(n) = g(n-1) + g(n-2)$$

$$g(n) = \frac{1}{\sqrt{5}}\left(\left(\frac{1+\sqrt{5}}{2}\right)^{n+1} - \left(\frac{1-\sqrt{5}}{2}\right)^{n+1}\right)$$

$$f(n) = \frac{1}{\sqrt{5}}\left(\left(\frac{1+\sqrt{5}}{2}\right)^{n} - \left(\frac{1-\sqrt{5}}{2}\right)^{n}\right) + \frac{1}{\sqrt{5}}\left(\left(\frac{1+\sqrt{5}}{2}\right)^{n-1} - \left(\frac{1-\sqrt{5}}{2}\right)^{n-1}\right)$$

$$f(n) = \frac{1}{\sqrt{5}}\left(\left(\frac{1+\sqrt{5}}{2}\right)^{n} - \left(\frac{1-\sqrt{5}}{2}\right)^{n} + \left(\frac{1+\sqrt{5}}{2}\right)^{n-1} - \left(\frac{1-\sqrt{5}}{2}\right)^{n-1}\right)$$

$$O(n) = \frac{5+3\sqrt{5}}{10}\left(\left(\frac{1+\sqrt{5}}{2}\right)^{n-1}\right.$$