2. Sequence Rule:

It's a Fibonacci sequence.

For $F_0 = 0$, $F_1 = 1$

$F_n = F_{n-1} + F_{n-2}$, $n = 2, 3, 4, 5, \ldots$

3. $s(x) = x^8 + x^7 + 2x^6 + 3x^5 + 5x^4 + 8x^3 + 13x^2 + 21x + 34$

$r(x) = x^9$

find $c(x)$

let $f(x)r(x) + c(x)s(x) = b(x)$, $\deg b < \deg c$

	$f(x)$	$c(x)$	$b(x)$
(1)	1	0	x^9
(2)	0	1	$x^8+x^7+2x^6+3x^5+5x^4+8x^3+13x^2+21x+34$
(3)	1	$-x$	$-x^8-2x^7-3x^6-5x^5-8x^4-13x^3-21x^2-34x$
(4)	1	$1-x$	$-x^7-x^6-2x^5-3x^4-5x^3-8x^2-13x+34$

(5) $1-x$ x^2-2x $-x^7-x^6-2x^5-3x^4-5x^3-8x^2-68x$

(6) x $-x^2+x+1$ $55x+34$

$f(x)r(x)+c(x)s(x)=b(x)$

$\Rightarrow x^{10}+(-x^2+x+1)(x^8+x^7+2x^6+3x^5+5x^4+8x^3+13x^2+21x+34)$

$=x^{10}+(-x^{10}-x^9-2x^8-3x^7-5x^6-8x^5-13x^4-21x^3-34x^2$
$+x^9+x^8+2x^7+3x^6+5x^5+8x^4+13x^3+21x^2+34x$
$+x^8+x^7+2x^6+3x^5+5x^4+8x^3+13x^2+21x+34)$

$=55x+34=b(x)$

So, we find $c(x)=-x^2+x+1$

such that: $f(x)r(x)+c(x)s(x)=b(x)$

$\deg b < \deg c$