Reed Solomon Encipher:

Message: _____
Message in numbers: _____ (= m_1m_2m_3 . . . m_n)
Message Polynomial: f(x) = m_1 + m_2x^2+ m_3x^3 + ... + m_nx^{n-1}

Code words: (c,f(c)) – Need at least 'n' of them for someone to obtain the message

Example:

Message: great
Message in numbers: 6, 17, 4, 0, 19
Message Polynomial: f(x) = 6+17x+4x^2+0x^3+19x^4

Code words: f(0) = 6, f(1) = 46, f(2) = 360, f(3) = 1632, f(4) = 5002, f(5) = 12066

(6, 46, 360, 1632, 5002, 12066)

Reed Solomon Decipher:

Wolfram Alpha:

- Linear fit {x_1,y_1}, {x_2,y_2}
- Quadratic fit {x_1,y_1}, {x_2,y_2}, {x_3,y_3}
- Cubic fit {x_1,y_1}, {x_2,y_2}, {x_4,y_4}, {x_5,y_5}
- Quartic
- Quintic
- Sextic

Example Continued:

- Quartic fit {0,6}, {1,46}, {2,360}, {3,1632}, {4,5002}, {5,12066}
- Result: 6+17x+4x^2+0x^3+19x^4
- Message in numbers: 6, 17, 4, 0 ,19
- Message: great