$$J(A,\varphi;x) := J(x+\varphi(Ax);x) = 1 + \sum_{1 \le \#1 \le n} [A]_I \prod_{j \in I} \varphi'(\langle A_j, x \rangle) \equiv \frac{1}{1 + a_{11}\varphi'(\langle A_1, x \rangle) + \dots + a_m \varphi'(\langle A_n, x \rangle) + [A]_{1,2}\varphi'(\langle A_1, x \rangle)}$$