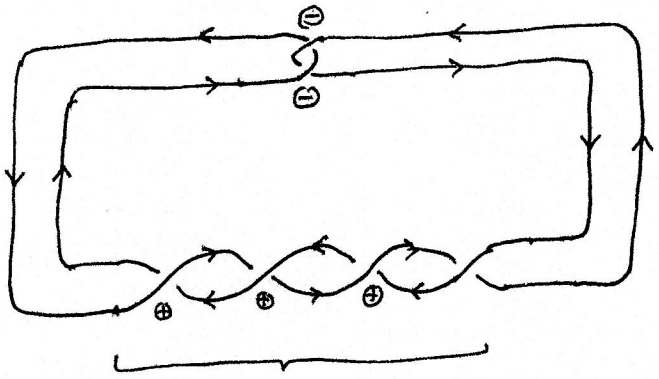
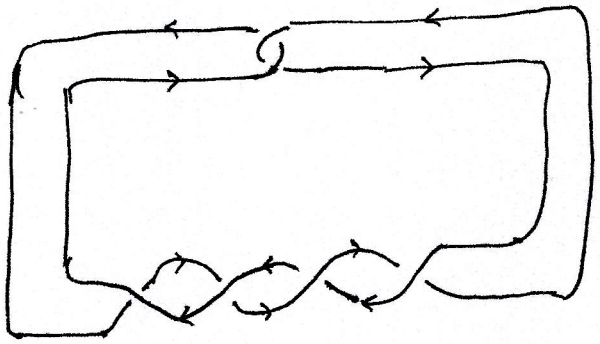
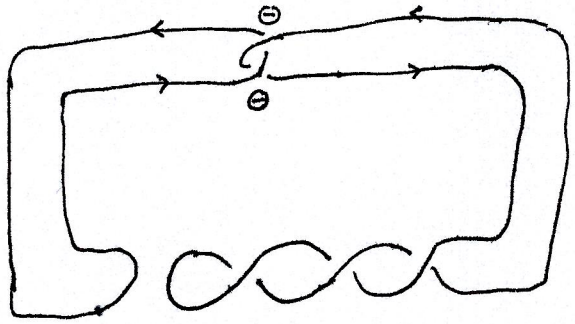
$K_+ = X_n =$



$K_- \sim X_{n-1}$:



$K_0 \sim H_-$



$$A^4 f(K_+) - A^{-4} f(K_-) = (A^{-2} - A^2) f(K_0)$$

$$A^4 f(X_n) - A^{-4} f(X_{n-1}) = (A^{-2} - A^2) f(H_-) = (A^{-2} - A^2)(-A^2(1+A^8))$$
$$= (A^4 - 1)(A^8 + 1)$$

$$f(X_n) = A^{-8} f(X_{n-1}) + (1 - A^{-4})(A^8 + 1).$$

$$f(X_0) = f(U_1) = 1.$$

Claim: $f(X_n) = \dfrac{A^4(A^8+1)}{A^4+1}(1 - A^{-8n}) + A^{-8n}.$