ity on $H_{\bar\partial}^{p,q}(M)$, and so this formula reads

$$\chi(\mathcal{O}_M) = \sum_{v(p)=0} \frac{1}{\det(I - e^{tA_p})}$$
$$= \sum_{v(p)=0} \frac{1}{\det A_p} \cdot \left(\frac{\det A_p}{\det(I - e^{tA_p})} \right).$$

⌈ By p246. $\chi(\mathcal{O}_M) = \sum (-1)^q \dim H^q(M, \mathcal{O})$
$= \sum (-1)^q \dim H_{\bar\partial}^{0,q}(M)$ since M is Kähler (p116)
$= L(f_t, \mathcal{O})$ ⌋

Now, for each t the holomorphic function

$$F_t(A) = \det(A) \cdot (\det(I - e^{tA}))^{-1}$$

on GL_n is invariant under conjugation, and hence uniquely expressible as a power series in the elementary invariant polynomials P^i on GL_n.

⌈ $B e^A B^{-1} = e^{BAB^{-1}}$ ⌋

Explicitly, for $A \in GL_n$ semisimple with eigenvalues $\lambda_1, \dots \lambda_n$,

$\Updownarrow$ ⌈ diagonalizable over a algebraic closed field. ⌋

$$F_t(A) = \frac{\det A}{\det(I - e^{tA})}$$
$$= \prod_{i=1}^{n} \left(\frac{\lambda_i}{1 - e^{t\lambda_i}} \right)$$
$$= (-1)^n t^{-n} \left\{ 1 - \left(\frac{\sum \lambda_i}{2}\right) t + \left(\frac{\sum \lambda_i^2}{12} + \frac{\sum \lambda_i \lambda_j}{4} \right) t^2 \right.$$
$$\left. - \left(\frac{\sum \lambda_i \lambda_j \lambda_k}{8} + \frac{\sum \lambda_i^2 \lambda_j + \sum \lambda_i \lambda_j^2}{24} \right) t^3 + \cdots \right\}$$