The Gauss-Bonnet Theorem for the Noncommutative Torus

Farzad Fathi Zadeh and Masoud Khalkhali

CMS Meeting, June 2010

Noncommutative Torus

Fix $\theta \in \mathbb{R} \setminus \mathbb{Q}$. $A_\theta =$ C^*-algebra generated by unitaries U and V satisfying

$$VU = e^{2\pi i\theta} UV.$$

Dense subalgebra of *'smooth functions'*:

$$A_\theta^\infty \subset A_\theta,$$

$a \in A_\theta^\infty$ iff

$$a = \sum a_{mn} U^m V^n$$

where $(a_{mn}) \in \mathcal{S}(\mathbb{Z}^2)$ is rapidly decreasing:

$$\sup_{m,n} (1 + m^2 + n^2)^k \, |a_{mn}| < \infty$$

for all $k \in \mathbb{N}$.

A_θ has a unique normalized trace (faithful and positive):

$$\tau_0 : A_\theta \to \mathbb{C}$$

$$\tau_0\left(\sum a_{mn} U^m V^n\right) = a_{00}.$$

Derivations $\delta_1, \delta_2 : A_\theta^\infty \to A_\theta^\infty$; uniquely defined by:

$$\delta_1(U) = U, \qquad \delta_1(V) = 0$$

$$\delta_2(U) = 0, \qquad \delta_2(V) = V.$$

We have

$$\delta_1\delta_2 = \delta_2\delta_1, \qquad \delta_i(a^*) = -\delta_i(a)^*,$$

Invariance property:

$$\tau_0(\delta_i(a)) = 0.$$

The Hilbert space

$$\mathcal{H}_0 = L^2(A_\theta, \tau_0),$$

completion of A_θ w.r.t. inner product

$$\langle a, b \rangle = \tau_0(b^* a).$$

The derivations

$$\delta_1, \delta_2 : \mathcal{H}_0 \to \mathcal{H}_0$$

are formally selfadjoint unbounded operators (analogues of $\frac{1}{i}\frac{d}{dx}, \frac{1}{i}\frac{d}{dy}$).

Complex structure

Fix

$$\tau = \tau_1 + i\tau_2, \qquad \tau_2 > 0,$$

and define

$$\partial = \delta_1 + \tau\delta_2, \qquad \partial^* = \delta_1 + \bar{\tau}\delta_2.$$

Define the Hilbert space (analogue of $(1,0)$-forms)

$$\mathcal{H}^{(1,0)} \subset \mathcal{H}_0$$

as the completion of the subspace spanned by finite sums $\sum a\partial b$, $a, b \in A_\theta^\infty$.

Connes and Tretkoff consider $\tau = i$.

Laplacian

View

$$\partial = \delta_1 + \tau\delta_2 : \mathcal{H}_0 \to \mathcal{H}^{(1,0)}$$

as an unbounded operator with the adjoint given by

$$\partial^* = \delta_1 + \bar{\tau}\delta_2.$$

Define the Laplacian

$$\triangle := \partial^*\partial = \delta_1^2 + 2\tau_1\delta_1\delta_2 + |\tau|^2\delta_2^2.$$

Conformal perturbation of the metric

To investigate the analogue of the Gauss-Bonnet theorem, vary the conformal class of the metric by $h = h^* \in A_\theta^\infty$: Define a postive linear functional $\varphi : A_\theta \to \mathbb{C}$ by

$$\varphi(a) = \tau_0(ae^{-h}), \qquad a \in A_\theta.$$

It is a twisted trace

$$\varphi(ba) = \varphi(a\sigma_i(b))$$

which is the KMS condition at $\beta = 1$ for 1PG of automorphisms $\sigma_t : A_\theta \to A_\theta, \ t \in \mathbb{R}$,

$$\sigma_t(x) = e^{ith} x e^{-ith}.$$

In fact

$$\sigma_t = \Delta^{-it}$$

with the modular operator

$$\Delta(x) = e^{-h} x e^h.$$

The perturbed Laplacian

Let $\mathcal{H}_\varphi =$ completion of A_θ w.r.t. $\langle , \rangle_\varphi$, where

$$\langle a, b\rangle_\varphi = \varphi(b^* a), \qquad a, b \in A_\theta.$$

Let

$$\partial_\varphi = \partial = \delta_1 + \tau\delta_2 : \mathcal{H}_\varphi \to \mathcal{H}^{(1,0)}.$$

It has a formal adjoint ∂_φ^* given by

$$\partial_\varphi^* = R(e^h)\partial^*$$

where $R(e^h)$ is the right multiplication operator by e^h $(R(e^h)(x) = e^h x)$.
Define the new Laplacian:

$$\triangle' = \partial_\varphi^* \partial_\varphi : \mathcal{H}_\varphi \to \mathcal{H}_\varphi.$$

Lemma (Connes-Tretkoff; continues to hold)

$\triangle'$ is anti-unitarily equivalent to the positive unbounded operator $k\Delta k$ acting on $\mathcal{H}_0$, where $k = e^{h/2}$.

Spectral zeta function

$$\zeta(s) = \sum \lambda_i^{-s} = \text{Trace}\,(\triangle'^{-s}), \qquad \text{Re}(s) > 1.$$

Mellin transform

$$\lambda^{-s} = \frac{1}{\Gamma(s)} \int_0^\infty e^{-t\lambda} t^{s-1} dt$$

gives us

$$\zeta(s) = \frac{1}{\Gamma(s)} \int_0^\infty \text{Trace}^+(e^{-t\triangle'}) t^{s-1} dt,$$

where

$$\text{Trace}^+(e^{-t\Delta'}) = \text{Trace}\,(e^{-t\Delta'}) - \text{Dim Ker}(\Delta').$$

ζ has a moromorphic extension to $\mathbb{C} \setminus 1$ with a simple pole at $s = 1$.

The Gauss-Bonnet theorem

Theorem (Gauss-Bonnet for classical Riemann surface)

Let Σ = *compact connected oriented Riemann surface with metric* g. *Then*

$$\zeta(0) + 1 = \frac{1}{12\pi} \int_{\Sigma} R = \frac{1}{6} \chi(\Sigma),$$

where ζ *is the zeta funtion associated to the Laplacian* $\triangle_g = d^* d$, *and* R *is the (scalar) curvature. In particular* $\zeta(0)$ *is a topological invariant; e.g. is invariant under conformal perturbations of the metric* $g \mapsto e^f g$.

Theorem (Gauss-Bonnet for NC torus)

Let $k \in A_\theta^\infty$ *be an invertible positive element. Then the value* $\zeta(0)$ *of the zeta function* ζ *of the operator* $\triangle' \sim k \triangle k$ *is independent of* k.

Pseudodifferential calculus

Recall: Connes (1980), Baaj (1988).
Differential operators of order n:

$$P : A_\theta^\infty \to A_\theta^\infty, \quad P = \sum_j a_j \delta_1^{j_1} \delta_2^{j_2}$$

with $a_j \in A_\theta^\infty, \; j = (j_1, j_2) \, |j| \leq n$.
Operator valued symbols of order $n \in \mathbb{Z}$: smooth maps

$$\rho : \mathbb{R}^2 \to A_\theta^\infty$$

s.t.

$$||\delta_1^{i_1} \delta_2^{i_2} (\partial_1^{j_1} \partial_2^{j_2} \rho(\xi))|| \leq c(1 + |\xi|)^{n-|j|},$$

where $\partial_i = \frac{\partial}{\partial \xi_i}$, and ρ is homogeneous of order n at infinity:

$$\lim \lambda^{-n} \rho(\lambda \xi_1, \lambda \xi_2), \qquad \lambda \to \infty$$

exists and is smooth.

Given a symbol ρ, define a pseudodifferential operator

$$P_\rho : A_\theta^\infty \to A_\theta^\infty$$

by

$$P_\rho(a) = (2\pi)^{-2} \int_{\mathbb{R}^2} \int_{\mathbb{R}^2} e^{-is.\xi} \rho(\xi) \alpha_s(a) ds d\xi,$$

where

$$\alpha_s(U^n V^m) = e^{is.(n,m)} U^n V^m.$$

For pseudodifferential operators P, Q, with symbols $\sigma(P) = \rho, \sigma(Q) = \rho'$:

$$\sigma(PQ) \sim \sum \frac{1}{\ell_1! \ell_2!} \partial_1^{\ell_1} \partial_2^{\ell_2} (\rho(\xi)) \delta_1^{\ell_1} \delta_2^{\ell_2} (\rho'(\xi)).$$

Elliptic Symbols: A symbol $\rho(\xi)$ of order n is called elliptic if $\rho(\xi)$ is invertible for $\xi \neq 0$, and, for $|\xi|$ large enough,

$$||\rho(\xi)^{-1}|| \leq c(1 + |\xi|)^{-n}.$$

Example:

$$\triangle = \delta_1^2 + 2\tau_1 \delta_1 \delta_2 + |\tau|^2 \delta_2^2$$

is an elliptic operator with an elliptic symbol

$$\sigma(\Delta) = \xi_1^2 + 2\tau_1 \xi_1 \xi_2 + |\tau|^2 \xi_2^2.$$

Computing $\zeta(0)$

Recall:

$$\zeta(s) = \frac{1}{\Gamma(s)} \int_0^\infty (\mathrm{Trace}(e^{-t\triangle'})t^{s-1} - 1)dt,$$

$1 = \mathrm{Dim\ Ker}(\triangle')$.
Cauchy integral formula:

$$e^{-t\Delta'} = \frac{1}{2\pi i} \int_C e^{-t\lambda}(\Delta' - \lambda 1)^{-1} d\lambda$$

gives the asymptotic expansion as $t \to 0^+$:

$$\mathrm{Trace}(e^{-t\triangle'}) \sim t^{-1} \sum_0^\infty B_{2n}(\triangle')t^n.$$

It follows that:

$$\zeta(0) = B_2(\triangle'),$$

$$B_2(\Delta') = \frac{1}{2\pi i} \int_{\mathbb{R}^2} \int_C e^{-\lambda} \tau_0(b_2(\xi, \lambda)) d\lambda d\xi$$

where

$$(b_0(\xi, \lambda) + b_1(\xi, \lambda) + b_2(\xi, \lambda) + \cdots)\sigma(\Delta' - \lambda) \sim 1,$$

$$b_j(\xi, \lambda) \text{ is a symbol of order } -2-j.$$

Can assume $\lambda = -1$:

$$\zeta(0) = -\int \tau_0(b_2(\xi, -1)) d\xi.$$

$$\sigma(\Delta' + 1) = \sigma(k\Delta k + 1) = (a_2 + 1) + a_1 + a_0$$

where

$$a_2 = k^2\xi_1^2 + 2\tau_1 k^2\xi_1\xi_2 + |\tau|^2 k^2 \xi_2^2$$

$$a_1 = (2k\delta_1(k) + 2\tau_1 k\delta_2(k))\xi_1 +$$

$$(2\tau_1 k\delta_1(k) + 2|\tau|^2 k\delta_2(k))\xi_2$$

$$a_0 = k\delta_1^2(k) + 2\tau_1 k\delta_1\delta_2(k) + |\tau|^2 k\delta_2^2(k).$$

Using the calculus for symbols:

$$b_0 = (a_2 + 1)^{-1}$$

$$b_1 = -(b_0 a_1 b_0 + \partial_i(b_0)\delta_i(a_2)b_0)$$

$$b_2 = -(b_0 a_0 b_0 + b_1 a_1 b_0 + \partial_i(b_0)\delta_i(a_1)b_0$$

$$+\partial_i(b_1)\delta_i(a_2)b_0 + (1/2)\partial_i\partial_j(b_0)\delta_i\delta_j(a_2)b_0).$$

Integrating $b_2(\xi, -1)$ over the plane

Pass to these cordinates:

$$\xi_1 = r\cos\theta - r\frac{\tau_1}{\tau_2}\sin\theta$$

$$\xi_2 = \frac{r}{\tau_2}\sin\theta$$

where θ ranges from 0 to 2π and r ranges from 0 to ∞.
After integrating $\int_0^{2\pi} \bullet \, d\theta$ we have terms such as

$$4\tau_1 r^3 b_0^3 k^2 \delta_2(k)\delta_1(k),$$

$$2r^3 b_0^2 k^2 \delta_1(k) b_0 \delta_1(k),$$

$$-2r^5 b_0^2 k^2 \delta_1(k) b_0^2 k^2 \delta_1(k),$$

where

$$b_0 = (1 + r^2 k^2)^{-1}.$$

Lemma (Connes-Tretkoff)

For $\rho \in A_\theta^\infty$ and every non-negative integer m:

$$\int_0^\infty \frac{k^{2m+2}u^m}{(k^2u+1)^{m+1}}\rho\frac{1}{(k^2u+1)}du = \mathcal{D}_m(\rho)$$

where

$$\mathcal{D}_m = \mathcal{L}_m(\Delta),$$

$$\Delta = \textit{the modular automorphism},$$

$$\mathcal{L}_m(u) = \int_0^\infty \frac{x^m}{(x+1)^{m+1}}\frac{1}{(xu+1)}dx =$$

$$(-1)^m(u-1)^{-(m+1)}\left(\log u - \sum_{j=1}^m (-1)^{j+1}\frac{(u-1)^j}{j}\right)$$

(modified logarithm).

Lemma

Let k be an invertible positive element of A_θ^∞. Then the value $\zeta(0)$ of the zeta function ζ of the operator $\triangle' \sim k\triangle k$ is given by

$$\zeta(0)+1=\frac{2\pi}{\tau_2}\varphi(f(\Delta)(\delta_1(k))\delta_1(k))+\frac{2\pi|\tau|^2}{\tau_2}\varphi(f(\Delta)(\delta_2(k))\delta_2(k))+$$

$$\frac{2\pi\tau_1}{\tau_2}\varphi(f(\Delta)(\delta_1(k))\delta_2(k))+\frac{2\pi\tau_1}{\tau_2}\varphi(f(\Delta)(\delta_2(k))\delta_1(k)),$$

where $\varphi(x)=\tau_0(xk^{-2})$, τ_0 is the unique trace on A_θ, Δ is the modular automorphism, and

$$f(u)=\frac{1}{6}u^{-1/2}-\frac{1}{3}+\mathcal{L}_1(u)-2(1+u^{1/2})\mathcal{L}_2(u)+(1+u^{1/2})^2\mathcal{L}_3(u).$$

($\mathcal{L}_m$ is the modified logarithm.)

Theorem (Gauss-Bonnet for NC torus)

Let $k \in A_\theta^\infty$ be an invertible positive element. Then the value $\zeta(0)$ of the zeta function ζ of the operator $\triangle' \sim k\triangle k$ is independent of k.

Proof.

$$\varphi(f(\Delta)(\delta_j(k))\delta_j(k)) = 0 \;\; for j = 1, 2,$$

$$\varphi(f(\Delta)(\delta_1(k))\delta_2(k)) = -\varphi(f(\Delta)(\delta_2(k))\delta_1(k)).$$

Therefore

$$\zeta(0) + 1 = \frac{2\pi}{\tau_2}\varphi(f(\Delta)(\delta_1(k))\delta_1(k)) + \frac{2\pi|\tau|^2}{\tau_2}\varphi(f(\Delta)(\delta_2(k))\delta_2(k)) +$$

$$\frac{2\pi\tau_1}{\tau_2}\varphi(f(\Delta)(\delta_1(k))\delta_2(k)) + \frac{2\pi\tau_1}{\tau_2}\varphi(f(\Delta)(\delta_2(k))\delta_1(k))$$

$$= 0$$

. □

$$
\begin{aligned}
&-b_0k\delta_1^2(k)b_0 - 2\tau_1b_0k\delta_1\delta_2(k)b_0 - |\tau|^2b_0k\delta_2^2(k)b_0 + \\
&6\xi_1^2b_0^2k^2\delta_1(k)^2b_0 + \xi_1^2b_0^2k^2\delta_1^2(k)b_0k + 5\xi_1^2b_0^2k^3\delta_1^2(k)b_0 + \\
&2\xi_1^2b_0k\delta_1(k)b_0\delta_1(k)b_0k + 6\xi_1^2b_0k\delta_1(k)b_0k\delta_1(k)b_0 + \\
&6\tau_1\xi_1^2b_0^2k^2\delta_1(k)\delta_2(k)b_0 + 6\tau_1\xi_1^2b_0^2k^2\delta_2(k)\delta_1(k)b_0 + \\
&2\tau_1\xi_1^2b_0^2k^2\delta_1\delta_2(k)b_0k + 10\tau_1\xi_1^2b_0^2k^3\delta_1\delta_2(k)b_0 + \\
&2\tau_1\xi_1^2b_0k\delta_1(k)b_0\delta_2(k)b_0k + 6\tau_1\xi_1^2b_0k\delta_1(k)b_0k\delta_2(k)b_0 + \\
&2\tau_1\xi_1^2b_0k\delta_2(k)b_0\delta_1(k)b_0k + 6\tau_1\xi_1^2b_0k\delta_2(k)b_0k\delta_1(k)b_0 + \\
&12\tau_1\xi_1\xi_2b_0^2k^2\delta_1(k)^2b_0 + 2\tau_1\xi_1\xi_2b_0^2k^2\delta_1^2(k)b_0k + \\
&10\tau_1\xi_1\xi_2b_0^2k^3\delta_1^2(k)b_0 + 4\tau_1\xi_1\xi_2b_0k\delta_1(k)b_0\delta_1(k)b_0k + \\
&12\tau_1\xi_1\xi_2b_0k\delta_1(k)b_0k\delta_1(k)b_0 + 4\tau_1^2\xi_1^2b_0^2k^2\delta_2(k)^2b_0 + \\
&4\tau_1^2\xi_1^2b_0^2k^3\delta_2^2(k)b_0 + 4\tau_1^2\xi_1^2b_0k\delta_2(k)b_0k\delta_2(k)b_0 + \\
&8\tau_1^2\xi_1\xi_2b_0^2k^2\delta_1(k)\delta_2(k)b_0 + 8\tau_1^2\xi_1\xi_2b_0^2k^2\delta_2(k)\delta_1(k)b_0 + \\
&4\tau_1^2\xi_1\xi_2b_0^2k^2\delta_1\delta_2(k)b_0k + 12\tau_1^2\xi_1\xi_2b_0^2k^3\delta_1\delta_2(k)b_0 + \\
&4\tau_1^2\xi_1\xi_2b_0k\delta_1(k)b_0\delta_2(k)b_0k + 8\tau_1^2\xi_1\xi_2b_0k\delta_1(k)b_0k\delta_2(k)b_0 + \\
&4\tau_1^2\xi_1\xi_2b_0k\delta_2(k)b_0\delta_1(k)b_0k + 8\tau_1^2\xi_1\xi_2b_0k\delta_2(k)b_0k\delta_1(k)b_0 + \\
&4\tau_1^2\xi_2^2b_0^2k^2\delta_1(k)^2b_0 + 4\tau_1^2\xi_2^2b_0^2k^3\delta_1^2(k)b_0 + \\
&4\tau_1^2\xi_2^2b_0k\delta_1(k)b_0k\delta_1(k)b_0 + 2|\tau|^2\xi_1^2b_0^2k^2\delta_2(k)^2b_0 + \\
&|\tau|^2\xi_1^2b_0^2k^2\delta_2^2(k)b_0k + |\tau|^2\xi_1^2b_0^2k^3\delta_2^2(k)b_0 + \\
&2|\tau|^2\xi_1^2b_0k\delta_2(k)b_0\delta_2(k)b_0k + 2|\tau|^2\xi_1^2b_0k\delta_2(k)b_0k\delta_2(k)b_0 + \\
&4|\tau|^2\xi_1\xi_2b_0^2k^2\delta_1(k)\delta_2(k)b_0 + 4|\tau|^2\xi_1\xi_2b_0^2k^2\delta_2(k)\delta_1(k)b_0 + \\
&8|\tau|^2\xi_1\xi_2b_0^2k^3\delta_1\delta_2(k)b_0 + 4|\tau|^2\xi_1\xi_2b_0k\delta_1(k)b_0k\delta_2(k)b_0 + \\
&4|\tau|^2\xi_1\xi_2b_0k\delta_2(k)b_0k\delta_1(k)b_0 + 2|\tau|^2\xi_2^2b_0^2k^2\delta_1(k)^2b_0 + \\
&|\tau|^2\xi_2^2b_0^2k^2\delta_1^2(k)b_0k + |\tau|^2\xi_2^2b_0^2k^3\delta_1^2(k)b_0 + \\
&2|\tau|^2\xi_2^2b_0k\delta_1(k)b_0\delta_1(k)b_0k + 2|\tau|^2\xi_2^2b_0k\delta_1(k)b_0k\delta_1(k)b_0 + \\
&12\tau_1|\tau|^2\xi_1\xi_2b_0^2k^2\delta_2(k)^2b_0 + 2\tau_1|\tau|^2\xi_1\xi_2b_0^2k^2\delta_2^2(k)b_0k + \\
&10\tau_1|\tau|^2\xi_1\xi_2b_0^2k^3\delta_2^2(k)b_0 + 4\tau_1|\tau|^2\xi_1\xi_2b_0k\delta_2(k)b_0\delta_2(k)b_0k + \\
&12\tau_1|\tau|^2\xi_1\xi_2b_0k\delta_2(k)b_0k\delta_2(k)b_0 + 6\tau_1|\tau|^2\xi_2^2b_0^2k^2\delta_1(k)\delta_2(k)b_0 + \\
&6\tau_1|\tau|^2\xi_2^2b_0^2k^2\delta_2(k)\delta_1(k)b_0 + 2\tau_1|\tau|^2\xi_2^2b_0^2k^2\delta_1\delta_2(k)b_0k + \\
&10\tau_1|\tau|^2\xi_2^2b_0^2k^3\delta_1\delta_2(k)b_0 + 2\tau_1|\tau|^2\xi_2^2b_0k\delta_1(k)b_0\delta_2(k)b_0k + \\
&6\tau_1|\tau|^2\xi_2^2b_0k\delta_1(k)b_0k\delta_2(k)b_0 + 2\tau_1|\tau|^2\xi_2^2b_0k\delta_2(k)b_0\delta_1(k)b_0k + \\
&6\tau_1|\tau|^2\xi_2^2b_0k\delta_2(k)b_0k\delta_1(k)b_0 + 6|\tau|^4\xi_2^2b_0^2k^2\delta_2(k)^2b_0 + \\
&|\tau|^4\xi_2^2b_0^2k^2\delta_2^2(k)b_0k + 5|\tau|^4\xi_2^2b_0^2k^3\delta_2^2(k)b_0 + \\
&2|\tau|^4\xi_2^2b_0k\delta_2(k)b_0\delta_2(k)b_0k + 6|\tau|^4\xi_2^2b_0k\delta_2(k)b_0k\delta_2(k)b_0 - \\
&8\xi_1^4b_0^3k^4\delta_1(k)^2b_0 - 4\xi_1^4b_0^3k^4\delta_1^2(k)b_0k - \\
&4\xi_1^4b_0^3k^5\delta_1^2(k)b_0 - 6\xi_1^4b_0^2k^2\delta_1(k)b_0k\delta_1(k)b_0k - \\
&10\xi_1^4b_0^2k^2\delta_1(k)b_0k^2\delta_1(k)b_0 - 10\xi_1^4b_0^2k^3\delta_1(k)b_0\delta_1(k)b_0k - \\
&14\xi_1^4b_0^2k^3\delta_1(k)b_0k\delta_1(k)b_0 - 4\xi_1^4b_0k\delta_1(k)b_0^2k^2\delta_1(k)b_0k - \\
&4\xi_1^4b_0k\delta_1(k)b_0^2k^3\delta_1(k)b_0 - 8\tau_1\xi_1^4b_0^3k^4\delta_1(k)\delta_2(k)b_0 - \\
&8\tau_1\xi_1^4b_0^3k^4\delta_2(k)\delta_1(k)b_0 - 8\tau_1\xi_1^4b_0^3k^4\delta_1\delta_2(k)b_0k - \\
&8\tau_1\xi_1^4b_0^3k^5\delta_1\delta_2(k)b_0 - 6\tau_1\xi_1^4b_0^2k^2\delta_1(k)b_0k\delta_2(k)b_0k - \\
&10\tau_1\xi_1^4b_0^2k^2\delta_1(k)b_0k^2\delta_2(k)b_0 - 6\tau_1\xi_1^4b_0^2k^2\delta_2(k)b_0k\delta_1(k)b_0k - \\
&10\tau_1\xi_1^4b_0^2k^2\delta_2(k)b_0k^2\delta_1(k)b_0 - 10\tau_1\xi_1^4b_0^2k^3\delta_1(k)b_0\delta_2(k)b_0k - \\
&14\tau_1\xi_1^4b_0^2k^3\delta_1(k)b_0k\delta_2(k)b_0 - 10\tau_1\xi_1^4b_0^2k^3\delta_2(k)b_0\delta_1(k)b_0k - \\
&14\tau_1\xi_1^4b_0^2k^3\delta_2(k)b_0k\delta_1(k)b_0 - 4\tau_1\xi_1^4b_0k\delta_1(k)b_0^2k^2\delta_2(k)b_0k - \\
&4\tau_1\xi_1^4b_0k\delta_1(k)b_0^2k^3\delta_2(k)b_0 - 4\tau_1\xi_1^4b_0k\delta_2(k)b_0^2k^2\delta_1(k)b_0k - \\
&4\tau_1\xi_1^4b_0k\delta_2(k)b_0^2k^3\delta_1(k)b_0 - 32\tau_1\xi_1^3\xi_2b_0^3k^4\delta_1(k)^2b_0 - \\
&16\tau_1\xi_1^3\xi_2b_0^3k^4\delta_1^2(k)b_0k - 16\tau_1\xi_1^3\xi_2b_0^3k^5\delta_1^2(k)b_0 - \\
&24\tau_1\xi_1^3\xi_2b_0^2k^2\delta_1(k)b_0k\delta_1(k)b_0k - 40\tau_1\xi_1^3\xi_2b_0^2k^2\delta_1(k)b_0k^2\delta_1(k)b_0 -
\end{aligned}
$$

$40\tau_1\xi_1^3\xi_2 b_0^2 k^3\delta_1(k)b_0\delta_1(k)b_0 k - 56\tau_1\xi_1^3\xi_2 b_0^2 k^3\delta_1(k)b_0 k\delta_1(k)b_0 -$
$16\tau_1\xi_1^3\xi_2 b_0 k\delta_1(k)b_0^2 k^2\delta_1(k)b_0 k - 16\tau_1\xi_1^3\xi_2 b_0 k\delta_1(k)b_0^2 k^3\delta_1(k)b_0 -$
$8\tau_1^2\xi_1^4 b_0^3 k^4\delta_2(k)^2 b_0 - 4\tau_1^2\xi_1^4 b_0^3 k^4\delta_2^2(k)b_0 k -$
$4\tau_1^2\xi_1^4 b_0^3 k^5\delta_2^2(k)b_0 - 4\tau_1^2\xi_1^4 b_0^2 k^2\delta_2(k)b_0 k\delta_2(k)b_0 k -$
$8\tau_1^2\xi_1^4 b_0^2 k^2\delta_2(k)b_0 k^2\delta_2(k)b_0 - 8\tau_1^2\xi_1^4 b_0^2 k^3\delta_2(k)b_0\delta_2(k)b_0 k -$
$12\tau_1^2\xi_1^4 b_0^2 k^3\delta_2(k)b_0 k\delta_2(k)b_0 - 4\tau_1^2\xi_1^4 b_0 k\delta_2(k)b_0^2 k^2\delta_2(k)b_0 k -$
$4\tau_1^2\xi_1^4 b_0 k\delta_2(k)b_0^2 k^3\delta_2(k)b_0 - 24\tau_1^2\xi_1^3\xi_2 b_0^3 k^4\delta_1(k)\delta_2(k)b_0 -$
$24\tau_1^2\xi_1^3\xi_2 b_0^3 k^4\delta_2(k)\delta_1(k)b_0 - 24\tau_1^2\xi_1^3\xi_2 b_0^3 k^4\delta_1\delta_2(k)b_0 k -$
$24\tau_1^2\xi_1^3\xi_2 b_0^3 k^5\delta_1\delta_2(k)b_0 - 20\tau_1^2\xi_1^3\xi_2 b_0^2 k^2\delta_1(k)b_0 k\delta_2(k)b_0 k -$
$32\tau_1^2\xi_1^3\xi_2 b_0^2 k^2\delta_1(k)b_0 k^2\delta_2(k)b_0 - 20\tau_1^2\xi_1^3\xi_2 b_0^2 k^2\delta_2(k)b_0 k\delta_1(k)b_0 k -$
$32\tau_1^2\xi_1^3\xi_2 b_0^2 k^2\delta_2(k)b_0 k^2\delta_1(k)b_0 - 32\tau_1^2\xi_1^3\xi_2 b_0^2 k^3\delta_1(k)b_0\delta_2(k)b_0 k -$
$44\tau_1^2\xi_1^3\xi_2 b_0^2 k^3\delta_1(k)b_0 k\delta_2(k)b_0 - 32\tau_1^2\xi_1^3\xi_2 b_0^2 k^3\delta_2(k)b_0\delta_1(k)b_0 k -$
$44\tau_1^2\xi_1^3\xi_2 b_0^2 k^3\delta_2(k)b_0 k\delta_1(k)b_0 - 12\tau_1^2\xi_1^3\xi_2 b_0 k\delta_1(k)b_0^2 k^2\delta_2(k)b_0 k -$
$12\tau_1^2\xi_1^3\xi_2 b_0 k\delta_1(k)b_0^2 k^3\delta_2(k)b_0 - 12\tau_1^2\xi_1^3\xi_2 b_0 k\delta_2(k)b_0^2 k^2\delta_1(k)b_0 k -$
$12\tau_1^2\xi_1^3\xi_2 b_0 k\delta_2(k)b_0^2 k^3\delta_1(k)b_0 - 40\tau_1^2\xi_1^2\xi_2^2 b_0^3 k^4\delta_1(k)^2 b_0 -$
$20\tau_1^2\xi_1^2\xi_2^2 b_0^3 k^4\delta_1^2(k)b_0 k - 20\tau_1^2\xi_1^2\xi_2^2 b_0^3 k^5\delta_1^2(k)b_0 -$
$28\tau_1^2\xi_1^2\xi_2^2 b_0^2 k^2\delta_1(k)b_0 k\delta_1(k)b_0 k - 48\tau_1^2\xi_1^2\xi_2^2 b_0^2 k^2\delta_1(k)b_0 k^2\delta_1(k)b_0 -$
$48\tau_1^2\xi_1^2\xi_2^2 b_0^2 k^3\delta_1(k)b_0\delta_1(k)b_0 k - 68\tau_1^2\xi_1^2\xi_2^2 b_0^2 k^3\delta_1(k)b_0 k\delta_1(k)b_0 -$
$20\tau_1^2\xi_1^2\xi_2^2 b_0 k\delta_1(k)b_0^2 k^2\delta_1(k)b_0 k - 20\tau_1^2\xi_1^2\xi_2^2 b_0 k\delta_1(k)b_0^2 k^3\delta_1(k)b_0 -$
$2|\tau|^2\xi_1^4 b_0^2 k^2\delta_2(k)b_0 k\delta_2(k)b_0 k - 2|\tau|^2\xi_1^4 b_0^2 k^2\delta_2(k)b_0 k^2\delta_2(k)b_0 -$
$2|\tau|^2\xi_1^4 b_0^2 k^3\delta_2(k)b_0\delta_2(k)b_0 k - 2|\tau|^2\xi_1^4 b_0^2 k^3\delta_2(k)b_0 k\delta_2(k)b_0 -$
$8|\tau|^2\xi_1^3\xi_2 b_0^3 k^4\delta_1(k)\delta_2(k)b_0 - 8|\tau|^2\xi_1^3\xi_2 b_0^3 k^4\delta_2(k)\delta_1(k)b_0 -$
$8|\tau|^2\xi_1^3\xi_2 b_0^3 k^4\delta_1\delta_2(k)b_0 k - 8|\tau|^2\xi_1^3\xi_2 b_0^3 k^5\delta_1\delta_2(k)b_0 -$
$4|\tau|^2\xi_1^3\xi_2 b_0^2 k^2\delta_1(k)b_0 k\delta_2(k)b_0 k - 8|\tau|^2\xi_1^3\xi_2 b_0^2 k^2\delta_1(k)b_0 k^2\delta_2(k)b_0 -$
$4|\tau|^2\xi_1^3\xi_2 b_0^2 k^2\delta_2(k)b_0 k\delta_1(k)b_0 k - 8|\tau|^2\xi_1^3\xi_2 b_0^2 k^2\delta_2(k)b_0 k^2\delta_1(k)b_0 -$
$8|\tau|^2\xi_1^3\xi_2 b_0^2 k^3\delta_1(k)b_0\delta_2(k)b_0 k - 12|\tau|^2\xi_1^3\xi_2 b_0^2 k^3\delta_1(k)b_0 k\delta_2(k)b_0 -$
$8|\tau|^2\xi_1^3\xi_2 b_0^2 k^3\delta_2(k)b_0\delta_1(k)b_0 k - 12|\tau|^2\xi_1^3\xi_2 b_0^2 k^3\delta_2(k)b_0 k\delta_1(k)b_0 -$
$4|\tau|^2\xi_1^3\xi_2 b_0 k\delta_1(k)b_0^2 k^2\delta_2(k)b_0 k - 4|\tau|^2\xi_1^3\xi_2 b_0 k\delta_1(k)b_0^2 k^3\delta_2(k)b_0 -$
$4|\tau|^2\xi_1^3\xi_2 b_0 k\delta_2(k)b_0^2 k^2\delta_1(k)b_0 k - 4|\tau|^2\xi_1^3\xi_2 b_0 k\delta_2(k)b_0^2 k^3\delta_1(k)b_0 -$
$8|\tau|^2\xi_1^2\xi_2^2 b_0^3 k^4\delta_1(k)^2 b_0 - 4|\tau|^2\xi_1^2\xi_2^2 b_0^3 k^4\delta_1^2(k)b_0 k -$
$4|\tau|^2\xi_1^2\xi_2^2 b_0^3 k^5\delta_1^2(k)b_0 - 8|\tau|^2\xi_1^2\xi_2^2 b_0^2 k^2\delta_1(k)b_0 k\delta_1(k)b_0 k -$
$12|\tau|^2\xi_1^2\xi_2^2 b_0^2 k^2\delta_1(k)b_0 k^2\delta_1(k)b_0 - 12|\tau|^2\xi_1^2\xi_2^2 b_0^2 k^3\delta_1(k)b_0\delta_1(k)b_0 k -$
$16|\tau|^2\xi_1^2\xi_2^2 b_0^2 k^3\delta_1(k)b_0 k\delta_1(k)b_0 - 4|\tau|^2\xi_1^2\xi_2^2 b_0 k\delta_1(k)b_0^2 k^2\delta_1(k)b_0 k -$
$4|\tau|^2\xi_1^2\xi_2^2 b_0 k\delta_1(k)b_0^2 k^3\delta_1(k)b_0 - 16\tau_1^3\xi_1^3\xi_2 b_0^3 k^4\delta_2(k)^2 b_0 -$
$8\tau_1^3\xi_1^3\xi_2 b_0^3 k^4\delta_2^2(k)b_0 k - 8\tau_1^3\xi_1^3\xi_2 b_0^3 k^5\delta_2^2(k)b_0 -$
$8\tau_1^3\xi_1^3\xi_2 b_0^2 k^2\delta_2(k)b_0 k\delta_2(k)b_0 k - 16\tau_1^3\xi_1^3\xi_2 b_0^2 k^2\delta_2(k)b_0 k^2\delta_2(k)b_0 -$
$16\tau_1^3\xi_1^3\xi_2 b_0^2 k^3\delta_2(k)b_0\delta_2(k)b_0 k - 24\tau_1^3\xi_1^3\xi_2 b_0^2 k^3\delta_2(k)b_0 k\delta_2(k)b_0 -$
$8\tau_1^3\xi_1^3\xi_2 b_0 k\delta_2(k)b_0^2 k^2\delta_2(k)b_0 k - 8\tau_1^3\xi_1^3\xi_2 b_0 k\delta_2(k)b_0^2 k^3\delta_2(k)b_0 -$
$16\tau_1^3\xi_1^2\xi_2^2 b_0^3 k^4\delta_1(k)\delta_2(k)b_0 - 16\tau_1^3\xi_1^2\xi_2^2 b_0^3 k^4\delta_2(k)\delta_1(k)b_0 -$
$16\tau_1^3\xi_1^2\xi_2^2 b_0^3 k^4\delta_1\delta_2(k)b_0 k - 16\tau_1^3\xi_1^2\xi_2^2 b_0^3 k^5\delta_1\delta_2(k)b_0 -$
$16\tau_1^3\xi_1^2\xi_2^2 b_0^2 k^2\delta_1(k)b_0 k\delta_2(k)b_0 k - 24\tau_1^3\xi_1^2\xi_2^2 b_0^2 k^2\delta_1(k)b_0 k^2\delta_2(k)b_0 -$
$16\tau_1^3\xi_1^2\xi_2^2 b_0^2 k^2\delta_2(k)b_0 k\delta_1(k)b_0 k - 24\tau_1^3\xi_1^2\xi_2^2 b_0^2 k^2\delta_2(k)b_0 k^2\delta_1(k)b_0 -$
$24\tau_1^3\xi_1^2\xi_2^2 b_0^2 k^3\delta_1(k)b_0\delta_2(k)b_0 k - 32\tau_1^3\xi_1^2\xi_2^2 b_0^2 k^3\delta_1(k)b_0 k\delta_2(k)b_0 -$
$24\tau_1^3\xi_1^2\xi_2^2 b_0^2 k^3\delta_2(k)b_0\delta_1(k)b_0 k - 32\tau_1^3\xi_1^2\xi_2^2 b_0^2 k^3\delta_2(k)b_0 k\delta_1(k)b_0 -$
$8\tau_1^3\xi_1^2\xi_2^2 b_0 k\delta_1(k)b_0^2 k^2\delta_2(k)b_0 k - 8\tau_1^3\xi_1^2\xi_2^2 b_0 k\delta_1(k)b_0^2 k^3\delta_2(k)b_0 -$
$8\tau_1^3\xi_1^2\xi_2^2 b_0 k\delta_2(k)b_0^2 k^2\delta_1(k)b_0 k - 8\tau_1^3\xi_1^2\xi_2^2 b_0 k\delta_2(k)b_0^2 k^3\delta_1(k)b_0 -$
$16\tau_1^3\xi_1\xi_2^3 b_0^3 k^4\delta_1(k)^2 b_0 - 8\tau_1^3\xi_1\xi_2^3 b_0^3 k^4\delta_1^2(k)b_0 k -$
$8\tau_1^3\xi_1\xi_2^3 b_0^3 k^5\delta_1^2(k)b_0 - 8\tau_1^3\xi_1\xi_2^3 b_0^2 k^2\delta_1(k)b_0 k\delta_1(k)b_0 k -$

$16\tau_1^3\xi_1\xi_2^3b_0^2k^2\delta_1(k)b_0k^2\delta_1(k)b_0 - 16\tau_1^3\xi_1\xi_2^3b_0^2k^3\delta_1(k)b_0\delta_1(k)b_0k -$
$24\tau_1^3\xi_1\xi_2^3b_0^2k^3\delta_1(k)b_0k\delta_1(k)b_0 - 8\tau_1^3\xi_1\xi_2^3b_0k\delta_1(k)b_0^2k^2\delta_1(k)b_0k -$
$8\tau_1^3\xi_1\xi_2^3b_0k\delta_1(k)b_0^2k^3\delta_1(k)b_0 - 16\tau_1|\tau|^2\xi_1^3\xi_2b_0^3k^4\delta_2(k)^2b_0 -$
$8\tau_1|\tau|^2\xi_1^3\xi_2b_0^3k^4\delta_2^2(k)b_0k - 8\tau_1|\tau|^2\xi_1^3\xi_2b_0^3k^5\delta_2^2(k)b_0 -$
$16\tau_1|\tau|^2\xi_1^3\xi_2b_0^2k^2\delta_2(k)b_0k\delta_2(k)b_0k - 24\tau_1|\tau|^2\xi_1^3\xi_2b_0^2k^2\delta_2(k)b_0k^2\delta_2(k)b_0 -$
$24\tau_1|\tau|^2\xi_1^3\xi_2b_0^2k^3\delta_2(k)b_0\delta_2(k)b_0k - 32\tau_1|\tau|^2\xi_1^3\xi_2b_0^2k^3\delta_2(k)b_0k\delta_2(k)b_0 -$
$8\tau_1|\tau|^2\xi_1^3\xi_2b_0k\delta_2(k)b_0^2k^2\delta_2(k)b_0k - 8\tau_1|\tau|^2\xi_1^3\xi_2b_0k\delta_2(k)b_0^2k^3\delta_2(k)b_0 -$
$32\tau_1|\tau|^2\xi_1^2\xi_2^2b_0^3k^4\delta_1(k)\delta_2(k)b_0 - 32\tau_1|\tau|^2\xi_1^2\xi_2^2b_0^3k^4\delta_2(k)\delta_1(k)b_0 -$
$32\tau_1|\tau|^2\xi_1^2\xi_2^2b_0^3k^4\delta_1\delta_2(k)b_0k - 32\tau_1|\tau|^2\xi_1^2\xi_2^2b_0^3k^5\delta_1\delta_2(k)b_0 -$
$20\tau_1|\tau|^2\xi_1^2\xi_2^2b_0^2k^2\delta_1(k)b_0k\delta_2(k)b_0k - 36\tau_1|\tau|^2\xi_1^2\xi_2^2b_0^2k^2\delta_1(k)b_0k^2\delta_2(k)b_0 -$
$20\tau_1|\tau|^2\xi_1^2\xi_2^2b_0^2k^2\delta_2(k)b_0k\delta_1(k)b_0k - 36\tau_1|\tau|^2\xi_1^2\xi_2^2b_0^2k^2\delta_2(k)b_0k^2\delta_1(k)b_0 -$
$36\tau_1|\tau|^2\xi_1^2\xi_2^2b_0^2k^3\delta_1(k)b_0\delta_2(k)b_0k - 52\tau_1|\tau|^2\xi_1^2\xi_2^2b_0^2k^3\delta_1(k)b_0k\delta_2(k)b_0 -$
$36\tau_1|\tau|^2\xi_1^2\xi_2^2b_0^2k^3\delta_2(k)b_0\delta_1(k)b_0k - 52\tau_1|\tau|^2\xi_1^2\xi_2^2b_0^2k^3\delta_2(k)b_0k\delta_1(k)b_0 -$
$16\tau_1|\tau|^2\xi_1^2\xi_2^2b_0k\delta_1(k)b_0^2k^2\delta_2(k)b_0k - 16\tau_1|\tau|^2\xi_1^2\xi_2^2b_0k\delta_1(k)b_0^2k^3\delta_2(k)b_0 -$
$16\tau_1|\tau|^2\xi_1^2\xi_2^2b_0k\delta_2(k)b_0^2k^2\delta_1(k)b_0k - 16\tau_1|\tau|^2\xi_1^2\xi_2^2b_0k\delta_2(k)b_0^2k^3\delta_1(k)b_0 -$
$16\tau_1|\tau|^2\xi_1\xi_2^3b_0^3k^4\delta_1(k)^2b_0 - 8\tau_1|\tau|^2\xi_1\xi_2^3b_0^3k^4\delta_1^2(k)b_0k -$
$8\tau_1|\tau|^2\xi_1\xi_2^3b_0^3k^5\delta_1^2(k)b_0 - 16\tau_1|\tau|^2\xi_1\xi_2^3b_0^2k^2\delta_1(k)b_0k\delta_1(k)b_0k -$
$24\tau_1|\tau|^2\xi_1\xi_2^3b_0^2k^2\delta_1(k)b_0k^2\delta_1(k)b_0 - 24\tau_1|\tau|^2\xi_1\xi_2^3b_0^2k^3\delta_1(k)b_0\delta_1(k)b_0k -$
$32\tau_1|\tau|^2\xi_1\xi_2^3b_0^2k^3\delta_1(k)b_0k\delta_1(k)b_0 - 8\tau_1|\tau|^2\xi_1\xi_2^3b_0k\delta_1(k)b_0^2k^2\delta_1(k)b_0k -$
$8\tau_1|\tau|^2\xi_1\xi_2^3b_0k\delta_1(k)b_0^2k^3\delta_1(k)b_0 - 40\tau_1^2|\tau|^2\xi_1^2\xi_2^2b_0^3k^4\delta_2(k)^2b_0 -$
$20\tau_1^2|\tau|^2\xi_1^2\xi_2^2b_0^3k^4\delta_2^2(k)b_0k - 20\tau_1^2|\tau|^2\xi_1^2\xi_2^2b_0^3k^5\delta_2^2(k)b_0 -$
$28\tau_1^2|\tau|^2\xi_1^2\xi_2^2b_0^2k^2\delta_2(k)b_0k\delta_2(k)b_0k - 48\tau_1^2|\tau|^2\xi_1^2\xi_2^2b_0^2k^2\delta_2(k)b_0k^2\delta_2(k)b_0 -$
$48\tau_1^2|\tau|^2\xi_1^2\xi_2^2b_0^2k^3\delta_2(k)b_0\delta_2(k)b_0k - 68\tau_1^2|\tau|^2\xi_1^2\xi_2^2b_0^2k^3\delta_2(k)b_0k\delta_2(k)b_0 -$
$20\tau_1^2|\tau|^2\xi_1^2\xi_2^2b_0k\delta_2(k)b_0^2k^2\delta_2(k)b_0k - 20\tau_1^2|\tau|^2\xi_1^2\xi_2^2b_0k\delta_2(k)b_0^2k^3\delta_2(k)b_0 -$
$24\tau_1^2|\tau|^2\xi_1\xi_2^3b_0^3k^4\delta_1(k)\delta_2(k)b_0 - 24\tau_1^2|\tau|^2\xi_1\xi_2^3b_0^3k^4\delta_2(k)\delta_1(k)b_0 -$
$24\tau_1^2|\tau|^2\xi_1\xi_2^3b_0^3k^4\delta_1\delta_2(k)b_0k - 24\tau_1^2|\tau|^2\xi_1\xi_2^3b_0^3k^5\delta_1\delta_2(k)b_0 -$
$20\tau_1^2|\tau|^2\xi_1\xi_2^3b_0^2k^2\delta_1(k)b_0k\delta_2(k)b_0k - 32\tau_1^2|\tau|^2\xi_1\xi_2^3b_0^2k^2\delta_1(k)b_0k^2\delta_2(k)b_0 -$
$20\tau_1^2|\tau|^2\xi_1\xi_2^3b_0^2k^2\delta_2(k)b_0k\delta_1(k)b_0k - 32\tau_1^2|\tau|^2\xi_1\xi_2^3b_0^2k^2\delta_2(k)b_0k^2\delta_1(k)b_0 -$
$32\tau_1^2|\tau|^2\xi_1\xi_2^3b_0^2k^3\delta_1(k)b_0\delta_2(k)b_0k - 44\tau_1^2|\tau|^2\xi_1\xi_2^3b_0^2k^3\delta_1(k)b_0k\delta_2(k)b_0 -$
$32\tau_1^2|\tau|^2\xi_1\xi_2^3b_0^2k^3\delta_2(k)b_0\delta_1(k)b_0k - 44\tau_1^2|\tau|^2\xi_1\xi_2^3b_0^2k^3\delta_2(k)b_0k\delta_1(k)b_0 -$
$12\tau_1^2|\tau|^2\xi_1\xi_2^3b_0k\delta_1(k)b_0^2k^2\delta_2(k)b_0k - 12\tau_1^2|\tau|^2\xi_1\xi_2^3b_0k\delta_1(k)b_0^2k^3\delta_2(k)b_0 -$
$12\tau_1^2|\tau|^2\xi_1\xi_2^3b_0k\delta_2(k)b_0^2k^2\delta_1(k)b_0k - 12\tau_1^2|\tau|^2\xi_1\xi_2^3b_0k\delta_2(k)b_0^2k^3\delta_1(k)b_0 -$
$8\tau_1^2|\tau|^2\xi_2^4b_0^3k^4\delta_1(k)^2b_0 - 4\tau_1^2|\tau|^2\xi_2^4b_0^3k^4\delta_1^2(k)b_0k -$
$4\tau_1^2|\tau|^2\xi_2^4b_0^3k^5\delta_1^2(k)b_0 - 4\tau_1^2|\tau|^2\xi_2^4b_0^2k^2\delta_1(k)b_0k\delta_1(k)b_0k -$
$8\tau_1^2|\tau|^2\xi_2^4b_0^2k^2\delta_1(k)b_0k^2\delta_1(k)b_0 - 8\tau_1^2|\tau|^2\xi_2^4b_0^2k^3\delta_1(k)b_0\delta_1(k)b_0k -$
$12\tau_1^2|\tau|^2\xi_2^4b_0^2k^3\delta_1(k)b_0k\delta_1(k)b_0 - 4\tau_1^2|\tau|^2\xi_2^4b_0k\delta_1(k)b_0^2k^2\delta_1(k)b_0k -$
$4\tau_1^2|\tau|^2\xi_2^4b_0k\delta_1(k)b_0^2k^3\delta_1(k)b_0 - 8|\tau|^4\xi_1^2\xi_2^2b_0^3k^4\delta_2(k)^2b_0 -$
$4|\tau|^4\xi_1^2\xi_2^2b_0^3k^4\delta_2^2(k)b_0k - 4|\tau|^4\xi_1^2\xi_2^2b_0^3k^5\delta_2^2(k)b_0 -$
$8|\tau|^4\xi_1^2\xi_2^2b_0^2k^2\delta_2(k)b_0k\delta_2(k)b_0k - 12|\tau|^4\xi_1^2\xi_2^2b_0^2k^2\delta_2(k)b_0k^2\delta_2(k)b_0 -$
$12|\tau|^4\xi_1^2\xi_2^2b_0^2k^3\delta_2(k)b_0\delta_2(k)b_0k - 16|\tau|^4\xi_1^2\xi_2^2b_0^2k^3\delta_2(k)b_0k\delta_2(k)b_0 -$
$4|\tau|^4\xi_1^2\xi_2^2b_0k\delta_2(k)b_0^2k^2\delta_2(k)b_0k - 4|\tau|^4\xi_1^2\xi_2^2b_0k\delta_2(k)b_0^2k^3\delta_2(k)b_0 -$
$8|\tau|^4\xi_1\xi_2^3b_0^3k^4\delta_1(k)\delta_2(k)b_0 - 8|\tau|^4\xi_1\xi_2^3b_0^3k^4\delta_2(k)\delta_1(k)b_0 -$
$8|\tau|^4\xi_1\xi_2^3b_0^3k^4\delta_1\delta_2(k)b_0k - 8|\tau|^4\xi_1\xi_2^3b_0^3k^5\delta_1\delta_2(k)b_0 -$
$4|\tau|^4\xi_1\xi_2^3b_0^2k^2\delta_1(k)b_0k\delta_2(k)b_0k - 8|\tau|^4\xi_1\xi_2^3b_0^2k^2\delta_1(k)b_0k^2\delta_2(k)b_0 -$
$4|\tau|^4\xi_1\xi_2^3b_0^2k^2\delta_2(k)b_0k\delta_1(k)b_0k - 8|\tau|^4\xi_1\xi_2^3b_0^2k^2\delta_2(k)b_0k^2\delta_1(k)b_0 -$
$8|\tau|^4\xi_1\xi_2^3b_0^2k^3\delta_1(k)b_0\delta_2(k)b_0k - 12|\tau|^4\xi_1\xi_2^3b_0^2k^3\delta_1(k)b_0k\delta_2(k)b_0 -$
$8|\tau|^4\xi_1\xi_2^3b_0^2k^3\delta_2(k)b_0\delta_1(k)b_0k - 12|\tau|^4\xi_1\xi_2^3b_0^2k^3\delta_2(k)b_0k\delta_1(k)b_0 -$
$4|\tau|^4\xi_1\xi_2^3b_0k\delta_1(k)b_0^2k^2\delta_2(k)b_0k - 4|\tau|^4\xi_1\xi_2^3b_0k\delta_1(k)b_0^2k^3\delta_2(k)b_0 -$

$4|\tau|^4\xi_1\xi_2^3 b_0 k\delta_2(k) b_0^2 k^2\delta_1(k) b_0 k - 4|\tau|^4\xi_1\xi_2^3 b_0 k\delta_2(k) b_0^2 k^3\delta_1(k) b_0 -$
$2|\tau|^4\xi_2^4 b_0^2 k^2\delta_1(k) b_0 k\delta_1(k) b_0 k - 2|\tau|^4\xi_2^4 b_0^2 k^2\delta_1(k) b_0 k^2\delta_1(k) b_0 -$
$2|\tau|^4\xi_2^4 b_0^2 k^3\delta_1(k) b_0\delta_1(k) b_0 k - 2|\tau|^4\xi_2^4 b_0^2 k^3\delta_1(k) b_0 k\delta_1(k) b_0 +$
$8\xi_1^6 b_0^3 k^4\delta_1(k) b_0 k\delta_1(k) b_0 k + 8\xi_1^6 b_0^3 k^4\delta_1(k) b_0 k^2\delta_1(k) b_0 +$
$8\xi_1^6 b_0^3 k^5\delta_1(k) b_0\delta_1(k) b_0 k + 8\xi_1^6 b_0^3 k^5\delta_1(k) b_0 k\delta_1(k) b_0 +$
$4\xi_1^6 b_0^2 k^2\delta_1(k) b_0^2 k^3\delta_1(k) b_0 k + 4\xi_1^6 b_0^2 k^2\delta_1(k) b_0^2 k^4\delta_1(k) b_0 +$
$4\xi_1^6 b_0^2 k^3\delta_1(k) b_0^2 k^2\delta_1(k) b_0 k + 4\xi_1^6 b_0^2 k^3\delta_1(k) b_0^2 k^3\delta_1(k) b_0 -$
$32\tau_1|\tau|^4\xi_1\xi_2^3 b_0^3 k^4\delta_2(k)^2 b_0 - 16\tau_1|\tau|^4\xi_1\xi_2^3 b_0^3 k^4\delta_2^2(k) b_0 k -$
$16\tau_1|\tau|^4\xi_1\xi_2^3 b_0^3 k^5\delta_2^2(k) b_0 - 24\tau_1|\tau|^4\xi_1\xi_2^3 b_0^2 k^2\delta_2(k) b_0 k\delta_2(k) b_0 k -$
$40\tau_1|\tau|^4\xi_1\xi_2^3 b_0^2 k^2\delta_2(k) b_0 k^2\delta_2(k) b_0 - 40\tau_1|\tau|^4\xi_1\xi_2^3 b_0^2 k^3\delta_2(k) b_0\delta_2(k) b_0 k -$
$56\tau_1|\tau|^4\xi_1\xi_2^3 b_0^2 k^3\delta_2(k) b_0 k\delta_2(k) b_0 - 16\tau_1|\tau|^4\xi_1\xi_2^3 b_0 k\delta_2(k) b_0^2 k^2\delta_2(k) b_0 k -$
$16\tau_1|\tau|^4\xi_1\xi_2^3 b_0 k\delta_2(k) b_0^2 k^3\delta_2(k) b_0 - 8\tau_1|\tau|^4\xi_2^4 b_0^3 k^4\delta_1(k)\delta_2(k) b_0 -$
$8\tau_1|\tau|^4\xi_2^4 b_0^3 k^4\delta_2(k)\delta_1(k) b_0 - 8\tau_1|\tau|^4\xi_2^4 b_0^3 k^4\delta_1\delta_2(k) b_0 k -$
$8\tau_1|\tau|^4\xi_2^4 b_0^3 k^5\delta_1\delta_2(k) b_0 - 6\tau_1|\tau|^4\xi_2^4 b_0^2 k^2\delta_1(k) b_0 k\delta_2(k) b_0 k -$
$10\tau_1|\tau|^4\xi_2^4 b_0^2 k^2\delta_1(k) b_0 k^2\delta_2(k) b_0 - 6\tau_1|\tau|^4\xi_2^4 b_0^2 k^2\delta_2(k) b_0 k\delta_1(k) b_0 k -$
$10\tau_1|\tau|^4\xi_2^4 b_0^2 k^2\delta_2(k) b_0 k^2\delta_1(k) b_0 - 10\tau_1|\tau|^4\xi_2^4 b_0^2 k^3\delta_1(k) b_0\delta_2(k) b_0 k -$
$14\tau_1|\tau|^4\xi_2^4 b_0^2 k^3\delta_1(k) b_0 k\delta_2(k) b_0 - 10\tau_1|\tau|^4\xi_2^4 b_0^2 k^3\delta_2(k) b_0\delta_1(k) b_0 k -$
$14\tau_1|\tau|^4\xi_2^4 b_0^2 k^3\delta_2(k) b_0 k\delta_1(k) b_0 - 4\tau_1|\tau|^4\xi_2^4 b_0 k\delta_1(k) b_0^2 k^2\delta_2(k) b_0 k -$
$4\tau_1|\tau|^4\xi_2^4 b_0 k\delta_1(k) b_0^2 k^3\delta_2(k) b_0 - 4\tau_1|\tau|^4\xi_2^4 b_0 k\delta_2(k) b_0^2 k^2\delta_1(k) b_0 k -$
$4\tau_1|\tau|^4\xi_2^4 b_0 k\delta_2(k) b_0^2 k^3\delta_1(k) b_0 + 8\tau_1\xi_1^6 b_0^3 k^4\delta_1(k) b_0 k\delta_2(k) b_0 k +$
$8\tau_1\xi_1^6 b_0^3 k^4\delta_1(k) b_0 k^2\delta_2(k) b_0 + 8\tau_1\xi_1^6 b_0^3 k^4\delta_2(k) b_0 k\delta_1(k) b_0 k +$
$8\tau_1\xi_1^6 b_0^3 k^4\delta_2(k) b_0 k^2\delta_1(k) b_0 + 8\tau_1\xi_1^6 b_0^3 k^5\delta_1(k) b_0\delta_2(k) b_0 k +$
$8\tau_1\xi_1^6 b_0^3 k^5\delta_1(k) b_0 k\delta_2(k) b_0 + 8\tau_1\xi_1^6 b_0^3 k^5\delta_2(k) b_0\delta_1(k) b_0 k +$
$8\tau_1\xi_1^6 b_0^3 k^5\delta_2(k) b_0 k\delta_1(k) b_0 + 4\tau_1\xi_1^6 b_0^2 k^2\delta_1(k) b_0^2 k^3\delta_2(k) b_0 k +$
$4\tau_1\xi_1^6 b_0^2 k^2\delta_1(k) b_0^2 k^4\delta_2(k) b_0 + 4\tau_1\xi_1^6 b_0^2 k^2\delta_2(k) b_0^2 k^3\delta_1(k) b_0 k +$
$4\tau_1\xi_1^6 b_0^2 k^2\delta_2(k) b_0^2 k^4\delta_1(k) b_0 + 4\tau_1\xi_1^6 b_0^2 k^3\delta_1(k) b_0^2 k^2\delta_2(k) b_0 k +$
$4\tau_1\xi_1^6 b_0^2 k^3\delta_1(k) b_0^2 k^3\delta_2(k) b_0 + 4\tau_1\xi_1^6 b_0^2 k^3\delta_2(k) b_0^2 k^2\delta_1(k) b_0 k +$
$4\tau_1\xi_1^6 b_0^2 k^3\delta_2(k) b_0^2 k^3\delta_1(k) b_0 + 48\tau_1\xi_1^5\xi_2 b_0^3 k^4\delta_1(k) b_0 k\delta_1(k) b_0 k +$
$48\tau_1\xi_1^5\xi_2 b_0^3 k^4\delta_1(k) b_0 k^2\delta_1(k) b_0 + 48\tau_1\xi_1^5\xi_2 b_0^3 k^5\delta_1(k) b_0\delta_1(k) b_0 k +$
$48\tau_1\xi_1^5\xi_2 b_0^3 k^5\delta_1(k) b_0 k\delta_1(k) b_0 + 24\tau_1\xi_1^5\xi_2 b_0^2 k^2\delta_1(k) b_0^2 k^3\delta_1(k) b_0 k +$
$24\tau_1\xi_1^5\xi_2 b_0^2 k^2\delta_1(k) b_0^2 k^4\delta_1(k) b_0 + 24\tau_1\xi_1^5\xi_2 b_0^2 k^3\delta_1(k) b_0^2 k^2\delta_1(k) b_0 k +$
$24\tau_1\xi_1^5\xi_2 b_0^2 k^3\delta_1(k) b_0^2 k^3\delta_1(k) b_0 - 8|\tau|^6\xi_2^4 b_0^3 k^4\delta_2(k)^2 b_0 - 4|\tau|^6\xi_2^4 b_0^3 k^4\delta_2^2(k) b_0 k -$
$4|\tau|^6\xi_2^4 b_0^3 k^5\delta_2^2(k) b_0 - 6|\tau|^6\xi_2^4 b_0^2 k^2\delta_2(k) b_0 k\delta_2(k) b_0 k -$
$10|\tau|^6\xi_2^4 b_0^2 k^2\delta_2(k) b_0 k^2\delta_2(k) b_0 - 10|\tau|^6\xi_2^4 b_0^2 k^3\delta_2(k) b_0\delta_2(k) b_0 k -$
$14|\tau|^6\xi_2^4 b_0^2 k^3\delta_2(k) b_0 k\delta_2(k) b_0 - 4|\tau|^6\xi_2^4 b_0 k\delta_2(k) b_0^2 k^2\delta_2(k) b_0 k -$
$4|\tau|^6\xi_2^4 b_0 k\delta_2(k) b_0^2 k^3\delta_2(k) b_0 + 8\tau_1^2\xi_1^6 b_0^3 k^4\delta_2(k) b_0 k\delta_2(k) b_0 k +$
$8\tau_1^2\xi_1^6 b_0^3 k^4\delta_2(k) b_0 k^2\delta_2(k) b_0 + 8\tau_1^2\xi_1^6 b_0^3 k^5\delta_2(k) b_0\delta_2(k) b_0 k +$
$8\tau_1^2\xi_1^6 b_0^3 k^5\delta_2(k) b_0 k\delta_2(k) b_0 + 4\tau_1^2\xi_1^6 b_0^2 k^2\delta_2(k) b_0^2 k^3\delta_2(k) b_0 k +$
$4\tau_1^2\xi_1^6 b_0^2 k^2\delta_2(k) b_0^2 k^4\delta_2(k) b_0 + 4\tau_1^2\xi_1^6 b_0^2 k^3\delta_2(k) b_0^2 k^2\delta_2(k) b_0 k +$
$4\tau_1^2\xi_1^6 b_0^2 k^3\delta_2(k) b_0^2 k^3\delta_2(k) b_0 + 40\tau_1^2\xi_1^5\xi_2 b_0^3 k^4\delta_1(k) b_0 k\delta_2(k) b_0 k +$
$40\tau_1^2\xi_1^5\xi_2 b_0^3 k^4\delta_1(k) b_0 k^2\delta_2(k) b_0 + 40\tau_1^2\xi_1^5\xi_2 b_0^3 k^4\delta_2(k) b_0 k\delta_1(k) b_0 k +$
$40\tau_1^2\xi_1^5\xi_2 b_0^3 k^4\delta_2(k) b_0 k^2\delta_1(k) b_0 + 40\tau_1^2\xi_1^5\xi_2 b_0^3 k^5\delta_1(k) b_0\delta_2(k) b_0 k +$
$40\tau_1^2\xi_1^5\xi_2 b_0^3 k^5\delta_1(k) b_0 k\delta_2(k) b_0 + 40\tau_1^2\xi_1^5\xi_2 b_0^3 k^5\delta_2(k) b_0\delta_1(k) b_0 k +$
$40\tau_1^2\xi_1^5\xi_2 b_0^3 k^5\delta_2(k) b_0 k\delta_1(k) b_0 + 20\tau_1^2\xi_1^5\xi_2 b_0^2 k^2\delta_1(k) b_0^2 k^3\delta_2(k) b_0 k +$
$20\tau_1^2\xi_1^5\xi_2 b_0^2 k^2\delta_1(k) b_0^2 k^4\delta_2(k) b_0 + 20\tau_1^2\xi_1^5\xi_2 b_0^2 k^2\delta_2(k) b_0^2 k^3\delta_1(k) b_0 k +$
$20\tau_1^2\xi_1^5\xi_2 b_0^2 k^2\delta_2(k) b_0^2 k^4\delta_1(k) b_0 + 20\tau_1^2\xi_1^5\xi_2 b_0^2 k^3\delta_1(k) b_0^2 k^2\delta_2(k) b_0 k +$
$20\tau_1^2\xi_1^5\xi_2 b_0^2 k^3\delta_1(k) b_0^2 k^3\delta_2(k) b_0 + 20\tau_1^2\xi_1^5\xi_2 b_0^2 k^3\delta_2(k) b_0^2 k^2\delta_1(k) b_0 k +$
$20\tau_1^2\xi_1^5\xi_2 b_0^2 k^3\delta_2(k) b_0^2 k^3\delta_1(k) b_0 + 104\tau_1^2\xi_1^4\xi_2^2 b_0^3 k^4\delta_1(k) b_0 k\delta_1(k) b_0 k +$

$$104\tau_1^2\xi_1^4\xi_2^2b_0^3k^4\delta_1(k)b_0k^2\delta_1(k)b_0 + 104\tau_1^2\xi_1^4\xi_2^2b_0^3k^5\delta_1(k)b_0\delta_1(k)b_0k +$$
$$104\tau_1^2\xi_1^4\xi_2^2b_0^3k^5\delta_1(k)b_0k\delta_1(k)b_0 + 52\tau_1^2\xi_1^4\xi_2^2b_0^2k^2\delta_1(k)b_0^2k^3\delta_1(k)b_0k +$$
$$52\tau_1^2\xi_1^4\xi_2^2b_0^2k^2\delta_1(k)b_0^2k^4\delta_1(k)b_0 + 52\tau_1^2\xi_1^4\xi_2^2b_0^2k^3\delta_1(k)b_0^2k^2\delta_1(k)b_0k +$$
$$52\tau_1^2\xi_1^4\xi_2^2b_0^2k^3\delta_1(k)b_0^2k^3\delta_1(k)b_0 + 8|\tau|^2\xi_1^5\xi_2b_0^3k^4\delta_1(k)b_0k\delta_2(k)b_0k +$$
$$8|\tau|^2\xi_1^5\xi_2b_0^3k^4\delta_1(k)b_0k^2\delta_2(k)b_0 + 8|\tau|^2\xi_1^5\xi_2b_0^3k^4\delta_2(k)b_0k\delta_1(k)b_0k +$$
$$8|\tau|^2\xi_1^5\xi_2b_0^3k^4\delta_2(k)b_0k^2\delta_1(k)b_0 + 8|\tau|^2\xi_1^5\xi_2b_0^3k^5\delta_1(k)b_0\delta_2(k)b_0k +$$
$$8|\tau|^2\xi_1^5\xi_2b_0^3k^5\delta_1(k)b_0k\delta_2(k)b_0 + 8|\tau|^2\xi_1^5\xi_2b_0^3k^5\delta_2(k)b_0\delta_1(k)b_0k +$$
$$8|\tau|^2\xi_1^5\xi_2b_0^3k^5\delta_2(k)b_0k\delta_1(k)b_0 + 4|\tau|^2\xi_1^5\xi_2b_0^2k^2\delta_1(k)b_0^2k^3\delta_2(k)b_0k +$$
$$4|\tau|^2\xi_1^5\xi_2b_0^2k^2\delta_1(k)b_0^2k^4\delta_2(k)b_0 + 4|\tau|^2\xi_1^5\xi_2b_0^2k^2\delta_2(k)b_0^2k^3\delta_1(k)b_0k +$$
$$4|\tau|^2\xi_1^5\xi_2b_0^2k^2\delta_2(k)b_0^2k^4\delta_1(k)b_0 + 4|\tau|^2\xi_1^5\xi_2b_0^2k^3\delta_1(k)b_0^2k^2\delta_2(k)b_0k +$$
$$4|\tau|^2\xi_1^5\xi_2b_0^2k^3\delta_1(k)b_0^2k^3\delta_2(k)b_0 + 4|\tau|^2\xi_1^5\xi_2b_0^2k^3\delta_2(k)b_0^2k^2\delta_1(k)b_0k +$$
$$4|\tau|^2\xi_1^5\xi_2b_0^2k^3\delta_2(k)b_0^2k^3\delta_1(k)b_0 + 16|\tau|^2\xi_1^4\xi_2^2b_0^3k^4\delta_1(k)b_0k\delta_1(k)b_0k +$$
$$16|\tau|^2\xi_1^4\xi_2^2b_0^3k^4\delta_1(k)b_0k^2\delta_1(k)b_0 + 16|\tau|^2\xi_1^4\xi_2^2b_0^3k^5\delta_1(k)b_0\delta_1(k)b_0k +$$
$$16|\tau|^2\xi_1^4\xi_2^2b_0^3k^5\delta_1(k)b_0k\delta_1(k)b_0 + 8|\tau|^2\xi_1^4\xi_2^2b_0^2k^2\delta_1(k)b_0^2k^3\delta_1(k)b_0k +$$
$$8|\tau|^2\xi_1^4\xi_2^2b_0^2k^2\delta_1(k)b_0^2k^4\delta_1(k)b_0 + 8|\tau|^2\xi_1^4\xi_2^2b_0^2k^3\delta_1(k)b_0^2k^2\delta_1(k)b_0k +$$
$$8|\tau|^2\xi_1^4\xi_2^2b_0^2k^3\delta_1(k)b_0^2k^3\delta_1(k)b_0 + 32\tau_1^3\xi_1^5\xi_2b_0^3k^4\delta_2(k)b_0k\delta_2(k)b_0k +$$
$$32\tau_1^3\xi_1^5\xi_2b_0^3k^4\delta_2(k)b_0k^2\delta_2(k)b_0 + 32\tau_1^3\xi_1^5\xi_2b_0^3k^5\delta_2(k)b_0\delta_2(k)b_0k +$$
$$32\tau_1^3\xi_1^5\xi_2b_0^3k^5\delta_2(k)b_0k\delta_2(k)b_0 + 16\tau_1^3\xi_1^5\xi_2b_0^2k^2\delta_2(k)b_0^2k^3\delta_2(k)b_0k +$$
$$16\tau_1^3\xi_1^5\xi_2b_0^2k^2\delta_2(k)b_0^2k^4\delta_2(k)b_0 + 16\tau_1^3\xi_1^5\xi_2b_0^2k^3\delta_2(k)b_0^2k^2\delta_2(k)b_0k +$$
$$16\tau_1^3\xi_1^5\xi_2b_0^2k^3\delta_2(k)b_0^2k^3\delta_2(k)b_0 + 64\tau_1^3\xi_1^4\xi_2^2b_0^3k^4\delta_1(k)b_0k\delta_2(k)b_0k +$$
$$64\tau_1^3\xi_1^4\xi_2^2b_0^3k^4\delta_1(k)b_0k^2\delta_2(k)b_0 + 64\tau_1^3\xi_1^4\xi_2^2b_0^3k^4\delta_2(k)b_0k\delta_1(k)b_0k +$$
$$64\tau_1^3\xi_1^4\xi_2^2b_0^3k^4\delta_2(k)b_0k^2\delta_1(k)b_0 + 64\tau_1^3\xi_1^4\xi_2^2b_0^3k^5\delta_1(k)b_0\delta_2(k)b_0k +$$
$$64\tau_1^3\xi_1^4\xi_2^2b_0^3k^5\delta_1(k)b_0k\delta_2(k)b_0 + 64\tau_1^3\xi_1^4\xi_2^2b_0^3k^5\delta_2(k)b_0\delta_1(k)b_0k +$$
$$64\tau_1^3\xi_1^4\xi_2^2b_0^3k^5\delta_2(k)b_0k\delta_1(k)b_0 + 32\tau_1^3\xi_1^4\xi_2^2b_0^2k^2\delta_1(k)b_0^2k^3\delta_2(k)b_0k +$$
$$32\tau_1^3\xi_1^4\xi_2^2b_0^2k^2\delta_1(k)b_0^2k^4\delta_2(k)b_0 + 32\tau_1^3\xi_1^4\xi_2^2b_0^2k^2\delta_2(k)b_0^2k^3\delta_1(k)b_0k +$$
$$32\tau_1^3\xi_1^4\xi_2^2b_0^2k^2\delta_2(k)b_0^2k^4\delta_1(k)b_0 + 32\tau_1^3\xi_1^4\xi_2^2b_0^2k^3\delta_1(k)b_0^2k^2\delta_2(k)b_0k +$$
$$32\tau_1^3\xi_1^4\xi_2^2b_0^2k^3\delta_1(k)b_0^2k^3\delta_2(k)b_0 + 32\tau_1^3\xi_1^4\xi_2^2b_0^2k^3\delta_2(k)b_0^2k^2\delta_1(k)b_0k +$$
$$32\tau_1^3\xi_1^4\xi_2^2b_0^2k^3\delta_2(k)b_0^2k^3\delta_1(k)b_0 + 96\tau_1^3\xi_1^3\xi_2^3b_0^3k^4\delta_1(k)b_0k\delta_1(k)b_0k +$$
$$96\tau_1^3\xi_1^3\xi_2^3b_0^3k^4\delta_1(k)b_0k^2\delta_1(k)b_0 + 96\tau_1^3\xi_1^3\xi_2^3b_0^3k^5\delta_1(k)b_0\delta_1(k)b_0k +$$
$$96\tau_1^3\xi_1^3\xi_2^3b_0^3k^5\delta_1(k)b_0k\delta_1(k)b_0 + 48\tau_1^3\xi_1^3\xi_2^3b_0^2k^2\delta_1(k)b_0^2k^3\delta_1(k)b_0k +$$
$$48\tau_1^3\xi_1^3\xi_2^3b_0^2k^2\delta_1(k)b_0^2k^4\delta_1(k)b_0 + 48\tau_1^3\xi_1^3\xi_2^3b_0^2k^3\delta_1(k)b_0^2k^2\delta_1(k)b_0k +$$
$$48\tau_1^3\xi_1^3\xi_2^3b_0^2k^3\delta_1(k)b_0^2k^3\delta_1(k)b_0 + 16\tau_1|\tau|^2\xi_1^5\xi_2b_0^3k^4\delta_2(k)b_0k\delta_2(k)b_0k +$$
$$16\tau_1|\tau|^2\xi_1^5\xi_2b_0^3k^4\delta_2(k)b_0k^2\delta_2(k)b_0 + 16\tau_1|\tau|^2\xi_1^5\xi_2b_0^3k^5\delta_2(k)b_0\delta_2(k)b_0k +$$
$$16\tau_1|\tau|^2\xi_1^5\xi_2b_0^3k^5\delta_2(k)b_0k\delta_2(k)b_0 + 8\tau_1|\tau|^2\xi_1^5\xi_2b_0^2k^2\delta_2(k)b_0^2k^3\delta_2(k)b_0k +$$
$$8\tau_1|\tau|^2\xi_1^5\xi_2b_0^2k^2\delta_2(k)b_0^2k^4\delta_2(k)b_0 + 8\tau_1|\tau|^2\xi_1^5\xi_2b_0^2k^3\delta_2(k)b_0^2k^2\delta_2(k)b_0k +$$
$$8\tau_1|\tau|^2\xi_1^5\xi_2b_0^2k^3\delta_2(k)b_0^2k^3\delta_2(k)b_0 + 56\tau_1|\tau|^2\xi_1^4\xi_2^2b_0^3k^4\delta_1(k)b_0k\delta_2(k)b_0k +$$
$$56\tau_1|\tau|^2\xi_1^4\xi_2^2b_0^3k^4\delta_1(k)b_0k^2\delta_2(k)b_0 + 56\tau_1|\tau|^2\xi_1^4\xi_2^2b_0^3k^4\delta_2(k)b_0k\delta_1(k)b_0k +$$
$$56\tau_1|\tau|^2\xi_1^4\xi_2^2b_0^3k^4\delta_2(k)b_0k^2\delta_1(k)b_0 + 56\tau_1|\tau|^2\xi_1^4\xi_2^2b_0^3k^5\delta_1(k)b_0\delta_2(k)b_0k +$$
$$56\tau_1|\tau|^2\xi_1^4\xi_2^2b_0^3k^5\delta_1(k)b_0k\delta_2(k)b_0 + 56\tau_1|\tau|^2\xi_1^4\xi_2^2b_0^3k^5\delta_2(k)b_0\delta_1(k)b_0k +$$
$$56\tau_1|\tau|^2\xi_1^4\xi_2^2b_0^3k^5\delta_2(k)b_0k\delta_1(k)b_0 + 28\tau_1|\tau|^2\xi_1^4\xi_2^2b_0^2k^2\delta_1(k)b_0^2k^3\delta_2(k)b_0k +$$
$$28\tau_1|\tau|^2\xi_1^4\xi_2^2b_0^2k^2\delta_1(k)b_0^2k^4\delta_2(k)b_0 + 28\tau_1|\tau|^2\xi_1^4\xi_2^2b_0^2k^2\delta_2(k)b_0^2k^3\delta_1(k)b_0k +$$
$$28\tau_1|\tau|^2\xi_1^4\xi_2^2b_0^2k^2\delta_2(k)b_0^2k^4\delta_1(k)b_0 + 28\tau_1|\tau|^2\xi_1^4\xi_2^2b_0^2k^3\delta_1(k)b_0^2k^2\delta_2(k)b_0k +$$
$$28\tau_1|\tau|^2\xi_1^4\xi_2^2b_0^2k^3\delta_1(k)b_0^2k^3\delta_2(k)b_0 + 28\tau_1|\tau|^2\xi_1^4\xi_2^2b_0^2k^3\delta_2(k)b_0^2k^2\delta_1(k)b_0k +$$
$$28\tau_1|\tau|^2\xi_1^4\xi_2^2b_0^2k^3\delta_2(k)b_0^2k^3\delta_1(k)b_0 + 64\tau_1|\tau|^2\xi_1^3\xi_2^3b_0^3k^4\delta_1(k)b_0k\delta_1(k)b_0k +$$
$$64\tau_1|\tau|^2\xi_1^3\xi_2^3b_0^3k^4\delta_1(k)b_0k^2\delta_1(k)b_0 + 64\tau_1|\tau|^2\xi_1^3\xi_2^3b_0^3k^5\delta_1(k)b_0\delta_1(k)b_0k +$$
$$64\tau_1|\tau|^2\xi_1^3\xi_2^3b_0^3k^5\delta_1(k)b_0k\delta_1(k)b_0 + 32\tau_1|\tau|^2\xi_1^3\xi_2^3b_0^2k^2\delta_1(k)b_0^2k^3\delta_1(k)b_0k +$$
$$32\tau_1|\tau|^2\xi_1^3\xi_2^3b_0^2k^2\delta_1(k)b_0^2k^4\delta_1(k)b_0 + 32\tau_1|\tau|^2\xi_1^3\xi_2^3b_0^2k^3\delta_1(k)b_0^2k^2\delta_1(k)b_0k +$$
$$32\tau_1|\tau|^2\xi_1^3\xi_2^3b_0^2k^3\delta_1(k)b_0^2k^3\delta_1(k)b_0 + 32\tau_1^4\xi_1^4\xi_2^2b_0^3k^4\delta_2(k)b_0k\delta_2(k)b_0k +$$

$$32\tau_1^4\xi_1^4\xi_2^2b_0^3k^4\delta_2(k)b_0k^2\delta_2(k)b_0 + 32\tau_1^4\xi_1^4\xi_2^2b_0^3k^5\delta_2(k)b_0\delta_2(k)b_0k +$$
$$32\tau_1^4\xi_1^4\xi_2^2b_0^3k^5\delta_2(k)b_0k\delta_2(k)b_0 + 16\tau_1^4\xi_1^4\xi_2^2b_0^2k^2\delta_2(k)b_0^2k^3\delta_2(k)b_0k +$$
$$16\tau_1^4\xi_1^4\xi_2^2b_0^2k^2\delta_2(k)b_0^2k^4\delta_2(k)b_0 + 16\tau_1^4\xi_1^4\xi_2^2b_0^2k^3\delta_2(k)b_0^2k^2\delta_2(k)b_0k +$$
$$16\tau_1^4\xi_1^4\xi_2^2b_0^2k^3\delta_2(k)b_0^2k^3\delta_2(k)b_0 + 32\tau_1^4\xi_1^3\xi_2^3b_0^3k^4\delta_1(k)b_0k\delta_2(k)b_0k +$$
$$32\tau_1^4\xi_1^3\xi_2^3b_0^3k^4\delta_1(k)b_0k^2\delta_2(k)b_0 + 32\tau_1^4\xi_1^3\xi_2^3b_0^3k^4\delta_2(k)b_0k\delta_1(k)b_0k +$$
$$32\tau_1^4\xi_1^3\xi_2^3b_0^3k^4\delta_2(k)b_0k^2\delta_1(k)b_0 + 32\tau_1^4\xi_1^3\xi_2^3b_0^3k^5\delta_1(k)b_0\delta_2(k)b_0k +$$
$$32\tau_1^4\xi_1^3\xi_2^3b_0^3k^5\delta_1(k)b_0k\delta_2(k)b_0 + 32\tau_1^4\xi_1^3\xi_2^3b_0^3k^5\delta_2(k)b_0\delta_1(k)b_0k +$$
$$32\tau_1^4\xi_1^3\xi_2^3b_0^3k^5\delta_2(k)b_0k\delta_1(k)b_0 + 16\tau_1^4\xi_1^3\xi_2^3b_0^2k^2\delta_1(k)b_0^2k^3\delta_2(k)b_0k +$$
$$16\tau_1^4\xi_1^3\xi_2^3b_0^2k^2\delta_1(k)b_0^2k^4\delta_2(k)b_0 + 16\tau_1^4\xi_1^3\xi_2^3b_0^2k^2\delta_2(k)b_0^2k^3\delta_1(k)b_0k +$$
$$16\tau_1^4\xi_1^3\xi_2^3b_0^2k^2\delta_2(k)b_0^2k^4\delta_1(k)b_0 + 16\tau_1^4\xi_1^3\xi_2^3b_0^2k^3\delta_1(k)b_0^2k^2\delta_2(k)b_0k +$$
$$16\tau_1^4\xi_1^3\xi_2^3b_0^2k^3\delta_1(k)b_0^2k^3\delta_2(k)b_0 + 16\tau_1^4\xi_1^3\xi_2^3b_0^2k^3\delta_2(k)b_0^2k^2\delta_1(k)b_0k +$$
$$16\tau_1^4\xi_1^3\xi_2^3b_0^2k^3\delta_2(k)b_0^2k^3\delta_1(k)b_0 + 32\tau_1^4\xi_1^2\xi_2^4b_0^3k^4\delta_1(k)b_0k\delta_1(k)b_0k +$$
$$32\tau_1^4\xi_1^2\xi_2^4b_0^3k^4\delta_1(k)b_0k^2\delta_1(k)b_0 + 32\tau_1^4\xi_1^2\xi_2^4b_0^3k^5\delta_1(k)b_0\delta_1(k)b_0k +$$
$$32\tau_1^4\xi_1^2\xi_2^4b_0^3k^5\delta_1(k)b_0k\delta_1(k)b_0 + 16\tau_1^4\xi_1^2\xi_2^4b_0^2k^2\delta_1(k)b_0^2k^3\delta_1(k)b_0k +$$
$$16\tau_1^4\xi_1^2\xi_2^4b_0^2k^2\delta_1(k)b_0^2k^4\delta_1(k)b_0 + 16\tau_1^4\xi_1^2\xi_2^4b_0^2k^3\delta_1(k)b_0^2k^2\delta_1(k)b_0k +$$
$$16\tau_1^4\xi_1^2\xi_2^4b_0^2k^3\delta_1(k)b_0^2k^3\delta_1(k)b_0 + 80\tau_1^2|\tau|^2\xi_1^4\xi_2^2b_0^3k^4\delta_2(k)b_0k\delta_2(k)b_0k +$$
$$80\tau_1^2|\tau|^2\xi_1^4\xi_2^2b_0^3k^4\delta_2(k)b_0k^2\delta_2(k)b_0 + 80\tau_1^2|\tau|^2\xi_1^4\xi_2^2b_0^3k^5\delta_2(k)b_0\delta_2(k)b_0k +$$
$$80\tau_1^2|\tau|^2\xi_1^4\xi_2^2b_0^3k^5\delta_2(k)b_0k\delta_2(k)b_0 + 40\tau_1^2|\tau|^2\xi_1^4\xi_2^2b_0^2k^2\delta_2(k)b_0^2k^3\delta_2(k)b_0k +$$
$$40\tau_1^2|\tau|^2\xi_1^4\xi_2^2b_0^2k^2\delta_2(k)b_0^2k^4\delta_2(k)b_0 + 40\tau_1^2|\tau|^2\xi_1^4\xi_2^2b_0^2k^3\delta_2(k)b_0^2k^2\delta_2(k)b_0k +$$
$$40\tau_1^2|\tau|^2\xi_1^4\xi_2^2b_0^2k^3\delta_2(k)b_0^2k^3\delta_2(k)b_0 + 112\tau_1^2|\tau|^2\xi_1^3\xi_2^3b_0^3k^4\delta_1(k)b_0k\delta_2(k)b_0k +$$
$$112\tau_1^2|\tau|^2\xi_1^3\xi_2^3b_0^3k^4\delta_1(k)b_0k^2\delta_2(k)b_0 + 112\tau_1^2|\tau|^2\xi_1^3\xi_2^3b_0^3k^4\delta_2(k)b_0k\delta_1(k)b_0k +$$
$$112\tau_1^2|\tau|^2\xi_1^3\xi_2^3b_0^3k^4\delta_2(k)b_0k^2\delta_1(k)b_0 + 112\tau_1^2|\tau|^2\xi_1^3\xi_2^3b_0^3k^5\delta_1(k)b_0\delta_2(k)b_0k +$$
$$112\tau_1^2|\tau|^2\xi_1^3\xi_2^3b_0^3k^5\delta_1(k)b_0k\delta_2(k)b_0 + 112\tau_1^2|\tau|^2\xi_1^3\xi_2^3b_0^3k^5\delta_2(k)b_0\delta_1(k)b_0k +$$
$$112\tau_1^2|\tau|^2\xi_1^3\xi_2^3b_0^3k^5\delta_2(k)b_0k\delta_1(k)b_0 + 56\tau_1^2|\tau|^2\xi_1^3\xi_2^3b_0^2k^2\delta_1(k)b_0^2k^3\delta_2(k)b_0k +$$
$$56\tau_1^2|\tau|^2\xi_1^3\xi_2^3b_0^2k^2\delta_1(k)b_0^2k^4\delta_2(k)b_0 + 56\tau_1^2|\tau|^2\xi_1^3\xi_2^3b_0^2k^2\delta_2(k)b_0^2k^3\delta_1(k)b_0k +$$
$$56\tau_1^2|\tau|^2\xi_1^3\xi_2^3b_0^2k^2\delta_2(k)b_0^2k^4\delta_1(k)b_0 + 56\tau_1^2|\tau|^2\xi_1^3\xi_2^3b_0^2k^3\delta_1(k)b_0^2k^2\delta_2(k)b_0k +$$
$$56\tau_1^2|\tau|^2\xi_1^3\xi_2^3b_0^2k^3\delta_1(k)b_0^2k^3\delta_2(k)b_0 + 56\tau_1^2|\tau|^2\xi_1^3\xi_2^3b_0^2k^3\delta_2(k)b_0^2k^2\delta_1(k)b_0k +$$
$$56\tau_1^2|\tau|^2\xi_1^3\xi_2^3b_0^2k^3\delta_2(k)b_0^2k^3\delta_1(k)b_0 + 80\tau_1^2|\tau|^2\xi_1^2\xi_2^4b_0^3k^4\delta_1(k)b_0k\delta_1(k)b_0k +$$
$$80\tau_1^2|\tau|^2\xi_1^2\xi_2^4b_0^3k^4\delta_1(k)b_0k^2\delta_1(k)b_0 + 80\tau_1^2|\tau|^2\xi_1^2\xi_2^4b_0^3k^5\delta_1(k)b_0\delta_1(k)b_0k +$$
$$80\tau_1^2|\tau|^2\xi_1^2\xi_2^4b_0^3k^5\delta_1(k)b_0k\delta_1(k)b_0 + 40\tau_1^2|\tau|^2\xi_1^2\xi_2^4b_0^2k^2\delta_1(k)b_0^2k^3\delta_1(k)b_0k +$$
$$40\tau_1^2|\tau|^2\xi_1^2\xi_2^4b_0^2k^2\delta_1(k)b_0^2k^4\delta_1(k)b_0 + 40\tau_1^2|\tau|^2\xi_1^2\xi_2^4b_0^2k^3\delta_1(k)b_0^2k^2\delta_1(k)b_0k +$$
$$40\tau_1^2|\tau|^2\xi_1^2\xi_2^4b_0^2k^3\delta_1(k)b_0^2k^3\delta_1(k)b_0 + 8|\tau|^4\xi_1^4\xi_2^2b_0^3k^4\delta_2(k)b_0k\delta_2(k)b_0k +$$
$$8|\tau|^4\xi_1^4\xi_2^2b_0^3k^4\delta_2(k)b_0k^2\delta_2(k)b_0 + 8|\tau|^4\xi_1^4\xi_2^2b_0^3k^5\delta_2(k)b_0\delta_2(k)b_0k +$$
$$8|\tau|^4\xi_1^4\xi_2^2b_0^3k^5\delta_2(k)b_0k\delta_2(k)b_0 + 4|\tau|^4\xi_1^4\xi_2^2b_0^2k^2\delta_2(k)b_0^2k^3\delta_2(k)b_0k +$$
$$4|\tau|^4\xi_1^4\xi_2^2b_0^2k^2\delta_2(k)b_0^2k^4\delta_2(k)b_0 + 4|\tau|^4\xi_1^4\xi_2^2b_0^2k^3\delta_2(k)b_0^2k^2\delta_2(k)b_0k +$$
$$4|\tau|^4\xi_1^4\xi_2^2b_0^2k^3\delta_2(k)b_0^2k^3\delta_2(k)b_0 + 16|\tau|^4\xi_1^3\xi_2^3b_0^3k^4\delta_1(k)b_0k\delta_2(k)b_0k +$$
$$16|\tau|^4\xi_1^3\xi_2^3b_0^3k^4\delta_1(k)b_0k^2\delta_2(k)b_0 + 16|\tau|^4\xi_1^3\xi_2^3b_0^3k^4\delta_2(k)b_0k\delta_1(k)b_0k +$$
$$16|\tau|^4\xi_1^3\xi_2^3b_0^3k^4\delta_2(k)b_0k^2\delta_1(k)b_0 + 16|\tau|^4\xi_1^3\xi_2^3b_0^3k^5\delta_1(k)b_0\delta_2(k)b_0k +$$
$$16|\tau|^4\xi_1^3\xi_2^3b_0^3k^5\delta_1(k)b_0k\delta_2(k)b_0 + 16|\tau|^4\xi_1^3\xi_2^3b_0^3k^5\delta_2(k)b_0\delta_1(k)b_0k +$$
$$16|\tau|^4\xi_1^3\xi_2^3b_0^3k^5\delta_2(k)b_0k\delta_1(k)b_0 + 8|\tau|^4\xi_1^3\xi_2^3b_0^2k^2\delta_1(k)b_0^2k^3\delta_2(k)b_0k +$$
$$8|\tau|^4\xi_1^3\xi_2^3b_0^2k^2\delta_1(k)b_0^2k^4\delta_2(k)b_0 + 8|\tau|^4\xi_1^3\xi_2^3b_0^2k^2\delta_2(k)b_0^2k^3\delta_1(k)b_0k +$$
$$8|\tau|^4\xi_1^3\xi_2^3b_0^2k^2\delta_2(k)b_0^2k^4\delta_1(k)b_0 + 8|\tau|^4\xi_1^3\xi_2^3b_0^2k^3\delta_1(k)b_0^2k^2\delta_2(k)b_0k +$$
$$8|\tau|^4\xi_1^3\xi_2^3b_0^2k^3\delta_1(k)b_0^2k^3\delta_2(k)b_0 + 8|\tau|^4\xi_1^3\xi_2^3b_0^2k^3\delta_2(k)b_0^2k^2\delta_1(k)b_0k +$$
$$8|\tau|^4\xi_1^3\xi_2^3b_0^2k^3\delta_2(k)b_0^2k^3\delta_1(k)b_0 + 8|\tau|^4\xi_1^2\xi_2^4b_0^3k^4\delta_1(k)b_0k\delta_1(k)b_0k +$$
$$8|\tau|^4\xi_1^2\xi_2^4b_0^3k^4\delta_1(k)b_0k^2\delta_1(k)b_0 + 8|\tau|^4\xi_1^2\xi_2^4b_0^3k^5\delta_1(k)b_0\delta_1(k)b_0k +$$
$$8|\tau|^4\xi_1^2\xi_2^4b_0^3k^5\delta_1(k)b_0k\delta_1(k)b_0 + 4|\tau|^4\xi_1^2\xi_2^4b_0^2k^2\delta_1(k)b_0^2k^3\delta_1(k)b_0k +$$
$$4|\tau|^4\xi_1^2\xi_2^4b_0^2k^2\delta_1(k)b_0^2k^4\delta_1(k)b_0 + 4|\tau|^4\xi_1^2\xi_2^4b_0^2k^3\delta_1(k)b_0^2k^2\delta_1(k)b_0k +$$
$$4|\tau|^4\xi_1^2\xi_2^4b_0^2k^3\delta_1(k)b_0^2k^3\delta_1(k)b_0 + 96\tau_1^3|\tau|^2\xi_1^3\xi_2^3b_0^3k^4\delta_2(k)b_0k\delta_2(k)b_0k +$$

$$96\tau_1^3|\tau|^2\xi_1^3\xi_2^3b_0^3k^4\delta_2(k)b_0k^2\delta_2(k)b_0 + 96\tau_1^3|\tau|^2\xi_1^3\xi_2^3b_0^3k^5\delta_2(k)b_0\delta_2(k)b_0k +$$
$$96\tau_1^3|\tau|^2\xi_1^3\xi_2^3b_0^3k^5\delta_2(k)b_0k\delta_2(k)b_0 + 48\tau_1^3|\tau|^2\xi_1^3\xi_2^3b_0^2k^2\delta_2(k)b_0^2k^3\delta_2(k)b_0k +$$
$$48\tau_1^3|\tau|^2\xi_1^3\xi_2^3b_0^2k^2\delta_2(k)b_0^2k^4\delta_2(k)b_0 + 48\tau_1^3|\tau|^2\xi_1^3\xi_2^3b_0^2k^3\delta_2(k)b_0^2k^2\delta_2(k)b_0k +$$
$$48\tau_1^3|\tau|^2\xi_1^3\xi_2^3b_0^2k^3\delta_2(k)b_0^2k^3\delta_2(k)b_0 + 64\tau_1^3|\tau|^2\xi_1^2\xi_2^4b_0^3k^4\delta_1(k)b_0k\delta_2(k)b_0k +$$
$$64\tau_1^3|\tau|^2\xi_1^2\xi_2^4b_0^3k^4\delta_1(k)b_0k^2\delta_2(k)b_0 + 64\tau_1^3|\tau|^2\xi_1^2\xi_2^4b_0^3k^4\delta_2(k)b_0k\delta_1(k)b_0k +$$
$$64\tau_1^3|\tau|^2\xi_1^2\xi_2^4b_0^3k^4\delta_2(k)b_0k^2\delta_1(k)b_0 + 64\tau_1^3|\tau|^2\xi_1^2\xi_2^4b_0^3k^5\delta_1(k)b_0\delta_2(k)b_0k +$$
$$64\tau_1^3|\tau|^2\xi_1^2\xi_2^4b_0^3k^5\delta_1(k)b_0k\delta_2(k)b_0 + 64\tau_1^3|\tau|^2\xi_1^2\xi_2^4b_0^3k^5\delta_2(k)b_0\delta_1(k)b_0k +$$
$$64\tau_1^3|\tau|^2\xi_1^2\xi_2^4b_0^3k^5\delta_2(k)b_0k\delta_1(k)b_0 + 32\tau_1^3|\tau|^2\xi_1^2\xi_2^4b_0^2k^2\delta_1(k)b_0^2k^3\delta_2(k)b_0k +$$
$$32\tau_1^3|\tau|^2\xi_1^2\xi_2^4b_0^2k^2\delta_1(k)b_0^2k^4\delta_2(k)b_0 + 32\tau_1^3|\tau|^2\xi_1^2\xi_2^4b_0^2k^2\delta_2(k)b_0^2k^3\delta_1(k)b_0k +$$
$$32\tau_1^3|\tau|^2\xi_1^2\xi_2^4b_0^2k^2\delta_2(k)b_0^2k^4\delta_1(k)b_0 + 32\tau_1^3|\tau|^2\xi_1^2\xi_2^4b_0^2k^3\delta_1(k)b_0^2k^2\delta_2(k)b_0k +$$
$$32\tau_1^3|\tau|^2\xi_1^2\xi_2^4b_0^2k^3\delta_1(k)b_0^2k^3\delta_2(k)b_0 + 32\tau_1^3|\tau|^2\xi_1^2\xi_2^4b_0^2k^3\delta_2(k)b_0^2k^2\delta_1(k)b_0k +$$
$$32\tau_1^3|\tau|^2\xi_1^2\xi_2^4b_0^2k^3\delta_2(k)b_0^2k^3\delta_1(k)b_0 + 32\tau_1^3|\tau|^2\xi_1\xi_2^5b_0^3k^4\delta_1(k)b_0k\delta_1(k)b_0k +$$
$$32\tau_1^3|\tau|^2\xi_1\xi_2^5b_0^3k^4\delta_1(k)b_0k^2\delta_1(k)b_0 + 32\tau_1^3|\tau|^2\xi_1\xi_2^5b_0^3k^5\delta_1(k)b_0\delta_1(k)b_0k +$$
$$32\tau_1^3|\tau|^2\xi_1\xi_2^5b_0^3k^5\delta_1(k)b_0k\delta_1(k)b_0 + 16\tau_1^3|\tau|^2\xi_1\xi_2^5b_0^2k^2\delta_1(k)b_0^2k^3\delta_1(k)b_0k +$$
$$16\tau_1^3|\tau|^2\xi_1\xi_2^5b_0^2k^2\delta_1(k)b_0^2k^4\delta_1(k)b_0 + 16\tau_1^3|\tau|^2\xi_1\xi_2^5b_0^2k^3\delta_1(k)b_0^2k^2\delta_1(k)b_0k +$$
$$16\tau_1^3|\tau|^2\xi_1\xi_2^5b_0^2k^3\delta_1(k)b_0^2k^3\delta_1(k)b_0 + 64\tau_1|\tau|^4\xi_1^3\xi_2^3b_0^3k^4\delta_2(k)b_0k\delta_2(k)b_0k +$$
$$64\tau_1|\tau|^4\xi_1^3\xi_2^3b_0^3k^4\delta_2(k)b_0k^2\delta_2(k)b_0 + 64\tau_1|\tau|^4\xi_1^3\xi_2^3b_0^3k^5\delta_2(k)b_0\delta_2(k)b_0k +$$
$$64\tau_1|\tau|^4\xi_1^3\xi_2^3b_0^3k^5\delta_2(k)b_0k\delta_2(k)b_0 + 32\tau_1|\tau|^4\xi_1^3\xi_2^3b_0^2k^2\delta_2(k)b_0^2k^3\delta_2(k)b_0k +$$
$$32\tau_1|\tau|^4\xi_1^3\xi_2^3b_0^2k^2\delta_2(k)b_0^2k^4\delta_2(k)b_0 + 32\tau_1|\tau|^4\xi_1^3\xi_2^3b_0^2k^3\delta_2(k)b_0^2k^2\delta_2(k)b_0k +$$
$$32\tau_1|\tau|^4\xi_1^3\xi_2^3b_0^2k^3\delta_2(k)b_0^2k^3\delta_2(k)b_0 + 56\tau_1|\tau|^4\xi_1^2\xi_2^4b_0^3k^4\delta_1(k)b_0k\delta_2(k)b_0k +$$
$$56\tau_1|\tau|^4\xi_1^2\xi_2^4b_0^3k^4\delta_1(k)b_0k^2\delta_2(k)b_0 + 56\tau_1|\tau|^4\xi_1^2\xi_2^4b_0^3k^4\delta_2(k)b_0k\delta_1(k)b_0k +$$
$$56\tau_1|\tau|^4\xi_1^2\xi_2^4b_0^3k^4\delta_2(k)b_0k^2\delta_1(k)b_0 + 56\tau_1|\tau|^4\xi_1^2\xi_2^4b_0^3k^5\delta_1(k)b_0\delta_2(k)b_0k +$$
$$56\tau_1|\tau|^4\xi_1^2\xi_2^4b_0^3k^5\delta_1(k)b_0k\delta_2(k)b_0 + 56\tau_1|\tau|^4\xi_1^2\xi_2^4b_0^3k^5\delta_2(k)b_0\delta_1(k)b_0k +$$
$$56\tau_1|\tau|^4\xi_1^2\xi_2^4b_0^3k^5\delta_2(k)b_0k\delta_1(k)b_0 + 28\tau_1|\tau|^4\xi_1^2\xi_2^4b_0^2k^2\delta_1(k)b_0^2k^3\delta_2(k)b_0k +$$
$$28\tau_1|\tau|^4\xi_1^2\xi_2^4b_0^2k^2\delta_1(k)b_0^2k^4\delta_2(k)b_0 + 28\tau_1|\tau|^4\xi_1^2\xi_2^4b_0^2k^2\delta_2(k)b_0^2k^3\delta_1(k)b_0k +$$
$$28\tau_1|\tau|^4\xi_1^2\xi_2^4b_0^2k^2\delta_2(k)b_0^2k^4\delta_1(k)b_0 + 28\tau_1|\tau|^4\xi_1^2\xi_2^4b_0^2k^3\delta_1(k)b_0^2k^2\delta_2(k)b_0k +$$
$$28\tau_1|\tau|^4\xi_1^2\xi_2^4b_0^2k^3\delta_1(k)b_0^2k^3\delta_2(k)b_0 + 28\tau_1|\tau|^4\xi_1^2\xi_2^4b_0^2k^3\delta_2(k)b_0^2k^2\delta_1(k)b_0k +$$
$$28\tau_1|\tau|^4\xi_1^2\xi_2^4b_0^2k^3\delta_2(k)b_0^2k^3\delta_1(k)b_0 + 16\tau_1|\tau|^4\xi_1\xi_2^5b_0^3k^4\delta_1(k)b_0k\delta_1(k)b_0k +$$
$$16\tau_1|\tau|^4\xi_1\xi_2^5b_0^3k^4\delta_1(k)b_0k^2\delta_1(k)b_0 + 16\tau_1|\tau|^4\xi_1\xi_2^5b_0^3k^5\delta_1(k)b_0\delta_1(k)b_0k +$$
$$16\tau_1|\tau|^4\xi_1\xi_2^5b_0^3k^5\delta_1(k)b_0k\delta_1(k)b_0 + 8\tau_1|\tau|^4\xi_1\xi_2^5b_0^2k^2\delta_1(k)b_0^2k^3\delta_1(k)b_0k +$$
$$8\tau_1|\tau|^4\xi_1\xi_2^5b_0^2k^2\delta_1(k)b_0^2k^4\delta_1(k)b_0 + 8\tau_1|\tau|^4\xi_1\xi_2^5b_0^2k^3\delta_1(k)b_0^2k^2\delta_1(k)b_0k +$$
$$8\tau_1|\tau|^4\xi_1\xi_2^5b_0^2k^3\delta_1(k)b_0^2k^3\delta_1(k)b_0 + 104\tau_1^2|\tau|^4\xi_1^2\xi_2^4b_0^3k^4\delta_2(k)b_0k\delta_2(k)b_0k +$$
$$104\tau_1^2|\tau|^4\xi_1^2\xi_2^4b_0^3k^4\delta_2(k)b_0k^2\delta_2(k)b_0 + 104\tau_1^2|\tau|^4\xi_1^2\xi_2^4b_0^3k^5\delta_2(k)b_0\delta_2(k)b_0k +$$
$$104\tau_1^2|\tau|^4\xi_1^2\xi_2^4b_0^3k^5\delta_2(k)b_0k\delta_2(k)b_0 + 52\tau_1^2|\tau|^4\xi_1^2\xi_2^4b_0^2k^2\delta_2(k)b_0^2k^3\delta_2(k)b_0k +$$
$$52\tau_1^2|\tau|^4\xi_1^2\xi_2^4b_0^2k^2\delta_2(k)b_0^2k^4\delta_2(k)b_0 + 52\tau_1^2|\tau|^4\xi_1^2\xi_2^4b_0^2k^3\delta_2(k)b_0^2k^2\delta_2(k)b_0k +$$
$$52\tau_1^2|\tau|^4\xi_1^2\xi_2^4b_0^2k^3\delta_2(k)b_0^2k^3\delta_2(k)b_0 + 40\tau_1^2|\tau|^4\xi_1\xi_2^5b_0^3k^4\delta_1(k)b_0k\delta_2(k)b_0k +$$
$$40\tau_1^2|\tau|^4\xi_1\xi_2^5b_0^3k^4\delta_1(k)b_0k^2\delta_2(k)b_0 + 40\tau_1^2|\tau|^4\xi_1\xi_2^5b_0^3k^4\delta_2(k)b_0k\delta_1(k)b_0k +$$
$$40\tau_1^2|\tau|^4\xi_1\xi_2^5b_0^3k^4\delta_2(k)b_0k^2\delta_1(k)b_0 + 40\tau_1^2|\tau|^4\xi_1\xi_2^5b_0^3k^5\delta_1(k)b_0\delta_2(k)b_0k +$$
$$40\tau_1^2|\tau|^4\xi_1\xi_2^5b_0^3k^5\delta_1(k)b_0k\delta_2(k)b_0 + 40\tau_1^2|\tau|^4\xi_1\xi_2^5b_0^3k^5\delta_2(k)b_0\delta_1(k)b_0k +$$
$$40\tau_1^2|\tau|^4\xi_1\xi_2^5b_0^3k^5\delta_2(k)b_0k\delta_1(k)b_0 + 20\tau_1^2|\tau|^4\xi_1\xi_2^5b_0^2k^2\delta_1(k)b_0^2k^3\delta_2(k)b_0k +$$
$$20\tau_1^2|\tau|^4\xi_1\xi_2^5b_0^2k^2\delta_1(k)b_0^2k^4\delta_2(k)b_0 + 20\tau_1^2|\tau|^4\xi_1\xi_2^5b_0^2k^2\delta_2(k)b_0^2k^3\delta_1(k)b_0k +$$
$$20\tau_1^2|\tau|^4\xi_1\xi_2^5b_0^2k^2\delta_2(k)b_0^2k^4\delta_1(k)b_0 + 20\tau_1^2|\tau|^4\xi_1\xi_2^5b_0^2k^3\delta_1(k)b_0^2k^2\delta_2(k)b_0k +$$
$$20\tau_1^2|\tau|^4\xi_1\xi_2^5b_0^2k^3\delta_1(k)b_0^2k^3\delta_2(k)b_0 + 20\tau_1^2|\tau|^4\xi_1\xi_2^5b_0^2k^3\delta_2(k)b_0^2k^2\delta_1(k)b_0k +$$
$$20\tau_1^2|\tau|^4\xi_1\xi_2^5b_0^2k^3\delta_2(k)b_0^2k^3\delta_1(k)b_0 + 8\tau_1^2|\tau|^4\xi_2^6b_0^3k^4\delta_1(k)b_0k\delta_1(k)b_0k +$$
$$8\tau_1^2|\tau|^4\xi_2^6b_0^3k^4\delta_1(k)b_0k^2\delta_1(k)b_0 + 8\tau_1^2|\tau|^4\xi_2^6b_0^3k^5\delta_1(k)b_0\delta_1(k)b_0k +$$
$$8\tau_1^2|\tau|^4\xi_2^6b_0^3k^5\delta_1(k)b_0k\delta_1(k)b_0 + 4\tau_1^2|\tau|^4\xi_2^6b_0^2k^2\delta_1(k)b_0^2k^3\delta_1(k)b_0k +$$
$$4\tau_1^2|\tau|^4\xi_2^6b_0^2k^2\delta_1(k)b_0^2k^4\delta_1(k)b_0 + 4\tau_1^2|\tau|^4\xi_2^6b_0^2k^3\delta_1(k)b_0^2k^2\delta_1(k)b_0k +$$
$$4\tau_1^2|\tau|^4\xi_2^6b_0^2k^3\delta_1(k)b_0^2k^3\delta_1(k)b_0 + 16|\tau|^6\xi_1^2\xi_2^4b_0^3k^4\delta_2(k)b_0k\delta_2(k)b_0k +$$

$16|\tau|^6\xi_1^2\xi_2^4b_0^3k^4\delta_2(k)b_0k^2\delta_2(k)b_0 + 16|\tau|^6\xi_1^2\xi_2^4b_0^3k^5\delta_2(k)b_0\delta_2(k)b_0k +$
$16|\tau|^6\xi_1^2\xi_2^4b_0^3k^5\delta_2(k)b_0k\delta_2(k)b_0 + 8|\tau|^6\xi_1^2\xi_2^4b_0^2k^2\delta_2(k)b_0^2k^3\delta_2(k)b_0k +$
$8|\tau|^6\xi_1^2\xi_2^4b_0^2k^2\delta_2(k)b_0^2k^4\delta_2(k)b_0 + 8|\tau|^6\xi_1^2\xi_2^4b_0^2k^3\delta_2(k)b_0^2k^2\delta_2(k)b_0k +$
$8|\tau|^6\xi_1^2\xi_2^4b_0^2k^3\delta_2(k)b_0^2k^3\delta_2(k)b_0 + 8|\tau|^6\xi_1\xi_2^5b_0^3k^4\delta_1(k)b_0k\delta_2(k)b_0k +$
$8|\tau|^6\xi_1\xi_2^5b_0^3k^4\delta_1(k)b_0k^2\delta_2(k)b_0 + 8|\tau|^6\xi_1\xi_2^5b_0^3k^4\delta_2(k)b_0k\delta_1(k)b_0k +$
$8|\tau|^6\xi_1\xi_2^5b_0^3k^4\delta_2(k)b_0k^2\delta_1(k)b_0 + 8|\tau|^6\xi_1\xi_2^5b_0^3k^5\delta_1(k)b_0\delta_2(k)b_0k +$
$8|\tau|^6\xi_1\xi_2^5b_0^3k^5\delta_1(k)b_0k\delta_2(k)b_0 + 8|\tau|^6\xi_1\xi_2^5b_0^3k^5\delta_2(k)b_0\delta_1(k)b_0k +$
$8|\tau|^6\xi_1\xi_2^5b_0^3k^5\delta_2(k)b_0k\delta_1(k)b_0 + 4|\tau|^6\xi_1\xi_2^5b_0^2k^2\delta_1(k)b_0^2k^3\delta_2(k)b_0k +$
$4|\tau|^6\xi_1\xi_2^5b_0^2k^2\delta_1(k)b_0^2k^4\delta_2(k)b_0 + 4|\tau|^6\xi_1\xi_2^5b_0^2k^2\delta_2(k)b_0^2k^3\delta_1(k)b_0k +$
$4|\tau|^6\xi_1\xi_2^5b_0^2k^2\delta_2(k)b_0^2k^4\delta_1(k)b_0 + 4|\tau|^6\xi_1\xi_2^5b_0^2k^3\delta_1(k)b_0^2k^2\delta_2(k)b_0k +$
$4|\tau|^6\xi_1\xi_2^5b_0^2k^3\delta_1(k)b_0^2k^3\delta_2(k)b_0 + 4|\tau|^6\xi_1\xi_2^5b_0^2k^3\delta_2(k)b_0^2k^2\delta_1(k)b_0k +$
$4|\tau|^6\xi_1\xi_2^5b_0^2k^3\delta_2(k)b_0^2k^3\delta_1(k)b_0 + 48\tau_1|\tau|^6\xi_1\xi_2^5b_0^3k^4\delta_2(k)b_0k\delta_2(k)b_0k +$
$48\tau_1|\tau|^6\xi_1\xi_2^5b_0^3k^4\delta_2(k)b_0k^2\delta_2(k)b_0 + 48\tau_1|\tau|^6\xi_1\xi_2^5b_0^3k^5\delta_2(k)b_0\delta_2(k)b_0k +$
$48\tau_1|\tau|^6\xi_1\xi_2^5b_0^3k^5\delta_2(k)b_0k\delta_2(k)b_0 + 24\tau_1|\tau|^6\xi_1\xi_2^5b_0^2k^2\delta_2(k)b_0^2k^3\delta_2(k)b_0k +$
$24\tau_1|\tau|^6\xi_1\xi_2^5b_0^2k^2\delta_2(k)b_0^2k^4\delta_2(k)b_0 + 24\tau_1|\tau|^6\xi_1\xi_2^5b_0^2k^3\delta_2(k)b_0^2k^2\delta_2(k)b_0k +$
$24\tau_1|\tau|^6\xi_1\xi_2^5b_0^2k^3\delta_2(k)b_0^2k^3\delta_2(k)b_0 + 8\tau_1|\tau|^6\xi_2^6b_0^3k^4\delta_1(k)b_0k\delta_2(k)b_0k +$
$8\tau_1|\tau|^6\xi_2^6b_0^3k^4\delta_1(k)b_0k^2\delta_2(k)b_0 + 8\tau_1|\tau|^6\xi_2^6b_0^3k^4\delta_2(k)b_0k\delta_1(k)b_0k +$
$8\tau_1|\tau|^6\xi_2^6b_0^3k^4\delta_2(k)b_0k^2\delta_1(k)b_0 + 8\tau_1|\tau|^6\xi_2^6b_0^3k^5\delta_1(k)b_0\delta_2(k)b_0k +$
$8\tau_1|\tau|^6\xi_2^6b_0^3k^5\delta_1(k)b_0k\delta_2(k)b_0 + 8\tau_1|\tau|^6\xi_2^6b_0^3k^5\delta_2(k)b_0\delta_1(k)b_0k +$
$8\tau_1|\tau|^6\xi_2^6b_0^3k^5\delta_2(k)b_0k\delta_1(k)b_0 + 4\tau_1|\tau|^6\xi_2^6b_0^2k^2\delta_1(k)b_0^2k^3\delta_2(k)b_0k +$
$4\tau_1|\tau|^6\xi_2^6b_0^2k^2\delta_1(k)b_0^2k^4\delta_2(k)b_0 + 4\tau_1|\tau|^6\xi_2^6b_0^2k^2\delta_2(k)b_0^2k^3\delta_1(k)b_0k +$
$4\tau_1|\tau|^6\xi_2^6b_0^2k^2\delta_2(k)b_0^2k^4\delta_1(k)b_0 + 4\tau_1|\tau|^6\xi_2^6b_0^2k^3\delta_1(k)b_0^2k^2\delta_2(k)b_0k +$
$4\tau_1|\tau|^6\xi_2^6b_0^2k^3\delta_1(k)b_0^2k^3\delta_2(k)b_0 + 4\tau_1|\tau|^6\xi_2^6b_0^2k^3\delta_2(k)b_0^2k^2\delta_1(k)b_0k +$
$4\tau_1|\tau|^6\xi_2^6b_0^2k^3\delta_2(k)b_0^2k^3\delta_1(k)b_0 + 8|\tau|^8\xi_2^6b_0^3k^4\delta_2(k)b_0k\delta_2(k)b_0k +$
$8|\tau|^8\xi_2^6b_0^3k^4\delta_2(k)b_0k^2\delta_2(k)b_0 + 8|\tau|^8\xi_2^6b_0^3k^5\delta_2(k)b_0\delta_2(k)b_0k +$
$8|\tau|^8\xi_2^6b_0^3k^5\delta_2(k)b_0k\delta_2(k)b_0 + 4|\tau|^8\xi_2^6b_0^2k^2\delta_2(k)b_0^2k^3\delta_2(k)b_0k +$
$4|\tau|^8\xi_2^6b_0^2k^2\delta_2(k)b_0^2k^4\delta_2(k)b_0 + 4|\tau|^8\xi_2^6b_0^2k^3\delta_2(k)b_0^2k^2\delta_2(k)b_0k +$
$4|\tau|^8\xi_2^6b_0^2k^3\delta_2(k)b_0^2k^3\delta_2(k)b_0$