(%i1) load(clifford);

package name: clifford.mac
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version: v24
Recommended location: share/contrib
last update: 23 Aug 2017

(%o1) *"C:/Dropbox/maxima/clifford.mac"*

pseudo differential forms

(%i2) clifford(dx,3);

(%o2) [1,1,1]

(%i3) declare([omega_1, omega_2, omega_3], scalar);

(%o3) *done*

(%i4) declare([eta_1, eta_2, eta_3], scalar);

(%o4) *done*

(%i5) declare([sigma_1, sigma_2, sigma_3], scalar);

(%o5) *done*

(%i6) omega: omega_1 * dx[1] +omega_2 *dx[2] +omega_3*dx[3];

(omega) $dx_1\,\omega_1+dx_2\,\omega_2+dx_3\,\omega_3$

(%i7) eta: eta_1 * dx[1] +eta_2 *dx[2] +eta_3*dx[3];

(eta) $dx_1\,\eta_1+dx_2\,\eta_2+dx_3\,\eta_3$

(%i8) sigma: sigma_1 * dx[1] +sigma_2 *dx[2] +sigma_3*dx[3];

(sigma) $dx_1\,\sigma_1+dx_2\,\sigma_2+dx_3\,\sigma_3$

(%i9) P1:omega & eta,dotsimpc;

(P1) $(dx_1\,.\,dx_2)\,\eta_2\,\omega_1+(dx_1\,.\,dx_3)\,\eta_3\,\omega_1-(dx_1\,.\,dx_2)\,\eta_1\,\omega_2+(dx_2\,.\,dx_3)\,\eta_3\,\omega_2-(dx_1\,.\,dx_3)\,\eta_1\,\omega_3-(dx_2\,.\,dx_3)\,\eta_2\,\omega_3$

(%i10) factorby(P1, [dx[1]. dx[2], dx[2].dx[3], dx[1].dx[3]]);

(%o10) $-(dx_1\,.\,dx_2)\,(-\eta_2\,\omega_1+\eta_1\,\omega_2)+(dx_1\,.\,dx_3)\,(\eta_3\,\omega_1-\eta_1\,\omega_3)-(dx_2\,.\,dx_3)\,(-\eta_3\,\omega_2+\eta_2\,\omega_3)$

(%i12) facsum(P1, [dx[1]. dx[2], dx[2].dx[3], dx[1].dx[3]]);

(%o12) $-(dx_1\,.\,dx_2)\,(-\eta_2\,\omega_1+\eta_1\,\omega_2)-(dx_1\,.\,dx_3)\,(-\eta_3\,\omega_1+\eta_1\,\omega_3)-(dx_2\,.\,dx_3)\,(-\eta_3\,\omega_2+\eta_2\,\omega_3)$

(%i13) P2: omega & eta & sigma,factor;

(P2) $-(dx_1\,.\,dx_2\,.\,dx_3)\,(-\eta_3\,\omega_2\,\sigma_1+\eta_2\,\omega_3\,\sigma_1+\eta_3\,\omega_1\,\sigma_2-\eta_1\,\omega_3\,\sigma_2-\eta_2\,\omega_1\,\sigma_3+\eta_1\,\omega_2\,\sigma_3)$