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def Maxwell_in_Geom_Calculus():
    Print_Function()
    X = (t,x,y,z) = symbols('t x y z',real=True)
    (st4d,g0,g1,g2,g3) = Ga.build('gamma*t|x|y|z',g=[1,1,1,1],coords=X)
    i = st4d.I()
    B = st4d.mv('B','vector',f=True)
    B = B.proj([g1,g2,g3]) # Make vector from spatial components of B
    print 'B =',B
    E = st4d.mv('E','vector',f=True)
    E = E.proj([g1,g2,g3]) # Make vector from spatial components of E
    print 'E =',E
    F = g0*E+i*g0*B
    print 'F =', F
    J = st4d.mv('J','vector',f=True)
    print 'J =', J
    gradF = st4d.grad*F
    print 'grad*F =', gradF.Fmt(2)
    W = gradF J
    print 'grad*F J = 0 =', W.Fmt(2)
    return

```

Code Output:

$$B = B^x \gamma_x + B^y \gamma_y + B^z \gamma_z$$

$$E = E^x \gamma_x + E^y \gamma_y + E^z \gamma_z$$

$$F = E^x \gamma_t \wedge \gamma_x + E^y \gamma_t \wedge \gamma_y + E^z \gamma_t \wedge \gamma_z + B^z \gamma_x \wedge \gamma_y - B^y \gamma_x \wedge \gamma_z + B^x \gamma_y \wedge \gamma_z$$

$$J = J^t \gamma_t + J^x \gamma_x + J^y \gamma_y + J^z \gamma_z$$

$$\begin{aligned} \nabla F = & (-\partial_x E^x - \partial_y E^y - \partial_z E^z) \gamma_t + (\partial_z B^y - \partial_y B^z + \partial_t E^x) \gamma_x + (-\partial_z B^x + \partial_x B^z + \partial_t E^y) \gamma_y + (\partial_y B^x - \partial_x B^y + \partial_t E^z) \gamma_z \\ & + (\partial_t B^z - \partial_y E^x + \partial_x E^y) \gamma_t \wedge \gamma_x \wedge \gamma_y + (-\partial_t B^y - \partial_z E^x + \partial_x E^z) \gamma_t \wedge \gamma_x \wedge \gamma_z + (\partial_t B^x - \partial_z E^y + \partial_y E^z) \gamma_t \wedge \gamma_y \wedge \gamma_z + (-\partial_x B^x - \partial_y B^y - \partial_z B^z) \gamma_x \wedge \gamma_y \wedge \gamma_z \end{aligned}$$

$$\begin{aligned} \nabla F - J = 0 = & (-J^t - \partial_x E^x - \partial_y E^y - \partial_z E^z) \gamma_t + (-J^x + \partial_z B^y - \partial_y B^z + \partial_t E^x) \gamma_x + (-J^y - \partial_z B^x + \partial_x B^z + \partial_t E^y) \gamma_y + (-J^z + \partial_y B^x - \partial_x B^y + \partial_t E^z) \gamma_z \\ & + (\partial_t B^z - \partial_y E^x + \partial_x E^y) \gamma_t \wedge \gamma_x \wedge \gamma_y + (-\partial_t B^y - \partial_z E^x + \partial_x E^z) \gamma_t \wedge \gamma_x \wedge \gamma_z + (\partial_t B^x - \partial_z E^y + \partial_y E^z) \gamma_t \wedge \gamma_y \wedge \gamma_z + (-\partial_x B^x - \partial_y B^y - \partial_z B^z) \gamma_x \wedge \gamma_y \wedge \gamma_z \end{aligned}$$