

```
def making_a_circle():
    Print_Function()
    global n, nbar
    g='1 0 0 0 0, \
      0 1 0 0 0, \
      0 0 1 0 0, \
      0 0 0 0 2, \
      0 0 0 2 0'
    c3d = Ga('e_1 e_2 e_3 n \bar{n}',g=g)
    (e1,e2,e3,n,nbar) = c3d.mv()
    e = n + nbar

    A=make_vector(e1/2,ga=c3d)
    B=make_vector(2*e1,ga=c3d)
    C=make_vector((4.0/5)*e1 + (3.0/5)*e2,ga=c3d)

    A=8*A
    B=2*B
    C=10*C

    print 'F(a) = ',A
    print 'F(b) = ',B
    print 'F(c) = ',C
    print '#Circle through a,b,c'

    print 'A^B = ',(A^B)/3
    print '#Circle triveector:'
    print '(A^B)^C = ',A^B^C
    print 'B^C = ', (B^C)/3
    print '#The same circle trivector as before, different computation order and scaled:'
    print 'A^(B^C) = ',(A^B^C)/18
    print '#Haven\'t figured out how to format the coefficients nicely'
    print '# Are A,B,C all on the line? Let\'s check one:'
    print 'A^B^C^D =',A^B^C^C

    return
```

Code Output:

$$F(a) = 4\mathbf{e_1} + \mathbf{n} - 4\bar{\mathbf{n}}$$
$$F(b) = 4\mathbf{e_1} + 4\mathbf{n} - 1\bar{\mathbf{n}}$$
$$F(c) = 8 \cdot 0\mathbf{e_1} + 6 \cdot 0\mathbf{e_2} + 5 \cdot 0\mathbf{n} - 5\bar{\mathbf{n}}$$

Circle through a,b,c

$$A \wedge B = 4\mathbf{e_1} \wedge \mathbf{n} + 4\mathbf{e_1} \wedge \bar{\mathbf{n}} + 5\mathbf{n} \wedge \bar{\mathbf{n}}$$

Circle triveector:

$$(A \wedge B) \wedge C = -72 \cdot 0\mathbf{e_1} \wedge \mathbf{e_2} \wedge \mathbf{n} - 72 \cdot 0\mathbf{e_1} \wedge \mathbf{e_2} \wedge \bar{\mathbf{n}} + 90 \cdot 0\mathbf{e_2} \wedge \mathbf{n} \wedge \bar{\mathbf{n}}$$
$$B \wedge C = 8 \cdot 0\mathbf{e_1} \wedge \mathbf{e_2} - 4 \cdot 0\mathbf{e_1} \wedge \mathbf{n} - 4 \cdot 0\mathbf{e_1} \wedge \bar{\mathbf{n}} - 8 \cdot 0\mathbf{e_2} \wedge \mathbf{n} + 2 \cdot 0\mathbf{e_2} \wedge \bar{\mathbf{n}} - 5 \cdot 0\mathbf{n} \wedge \bar{\mathbf{n}}$$

The same circle trivector as before, different computation order and scaled:

$$A \wedge (B \wedge C) = -4 \cdot 0\mathbf{e_1} \wedge \mathbf{e_2} \wedge \mathbf{n} - 4 \cdot 0\mathbf{e_1} \wedge \mathbf{e_2} \wedge \bar{\mathbf{n}} + 5 \cdot 0\mathbf{e_2} \wedge \mathbf{n} \wedge \bar{\mathbf{n}}$$

Haven't figured out how to format the coefficients nicely Are A,B,C all on the line? Let's check one:

$$A \wedge B \wedge C \wedge D = 0$$