1)

Notes 2: The ECE Lemma

The Lemma is a simple consequence of the tetrad postulate:

$$D_\mu q^a_\lambda = \partial_\mu q^a_\lambda + \omega^a_{\mu b} q^b_\lambda - \Gamma^\nu_{\mu\lambda} q^a_\nu$$
$$= 0 \quad -(1)$$

The first thing to note is that the Einsteinians now accept the tetrad postulate after spending a long time trying to refute it. The ECE Lemma is obtained from

$$\boxed{D^\mu (D_\mu q^a_\lambda) := 0.} \quad -(2)$$

The second thing to note is that the Einsteinians accept equation 2. The ECE Lemma is a re-arrangement of eq. (2) as follows.

$$D^\mu (D_\mu q^a_\lambda) = \partial^\mu (D_\mu q^a_\lambda) = 0 \quad -(3)$$

because:
$$D^\mu (D_\mu q^a_\lambda) = D^\mu (0) = \partial^\mu (0). \quad -(4)$$

So:
$$\partial^\mu \left(\partial_\mu q^a_\lambda + \omega^a_{\mu b} q^b_\lambda - \Gamma^\nu_{\mu\lambda} q^a_\nu \right) = 0. \quad -(5)$$

Now use:
$$\square := \partial^\mu \partial_\mu \quad -(6)$$

so:
$$\square q^a_\lambda = \partial^\mu \left(\Gamma^\nu_{\mu\lambda} q^a_\nu - \omega^a_{\mu b} q^b_\lambda \right). \quad -(7)$$
$$:= R q^a_\lambda$$

$$\boxed{\square q^a_\lambda := R q^a_\lambda} \quad -(8)$$

2)

The third thing to note is that the first line of eq. (7) is <u>accepted</u> now by the Pharasees, after spending years trying to give the false impression that it is somehow incorrect. The only thing left to them now is to question the second line of eq. (7):

$$R q^a_\lambda = \partial^\mu \left(\Gamma^\nu_{\mu\lambda} q^a_\nu - \omega^a_{\mu b} q^b_\lambda \right) \quad -(9)$$

i.e.

$$R := \frac{q^\lambda_a}{4} \partial^\mu \left(\Gamma^\nu_{\mu\lambda} q^a_\nu - \omega^a_{\mu b} q^b_\lambda \right) \quad -(10)$$

because:

$$q^a_\lambda q^\lambda_a = 4. \quad -(11)$$

The definition (10) is in all ways similar to the definition used by Einstein:

$$R = g^{\mu\nu} R_{\mu\nu} \quad -(12)$$

In eq (10), as in eq. (12), summation over repeated indices is used.

<u>The Exact Point of Fraud</u>

This occurs when Bruhn states that there are many definitions of R in eq. (10). If this were true, Einstein's own definition of R in eq. (12) would have many definitions. <u>This is of course pure nonsense.</u> In eq (12) $R_{\mu\nu}$ is the Ricci tensor, $g^{\mu\nu}$ the metric and R the scalar curvature.