Likelihood ratios measure relative evidence.
With likelihood ratios, better is bigger.
For goodness of fit, better is smaller
With Type I error, better is smaller LR (less Type I error).

Here are several ways to calculate a likelihood ratio.

1. From the explained variance R^2

$$LR = (1 - R^2)^{-n/2}$$

2. From a goodness of fit statistic G

$$G = -2lnLR$$
$$LR = e^{G/2}$$

G is distributed as χ^2 with k degrees of freedom

$$G \sim \chi^2(k)$$

k is the change in number of degrees of freedom in the ANODEV table

4. From ΔDev the reduction in deviance (improvement in fit) in the ANODEV table

$$\Delta Dev = G$$
$$G = -2\ln(L_m \,/\, L_{full}\,)$$

L_m is the likelihood of the reduced model
L_{full} is the likelihood of the full (unreduced) model

$$LR = (L_m \,/\, L_{full}\,)$$
$$LR = e^{G/2}$$

5. From the *t* statistic

$$LR = (1 + t^2/(n-2))^{n/2}$$

6. From the *F* statistic.

$$LR = \left(1 + F\left(\frac{df_{numerator}}{df_{denominator}}\right)\right)^{n/2}$$

7 From a model term displayed vertically in an ANOVA table.

$$LR = \left(\frac{SS_{term}+SS_{res}}{SS_{res}}\right)^{n/2}$$