

String tension calculation

The following formula is from the String Tension Guide for Bass Guitar, by GHS Strings:

$$T = (W(2LF)^2) / 386.4 = WL^2F^2/96.6$$

Where T is string tension in pounds, W is string unit weight, L is scale length in inches, and F is the frequency of the tuned open string.

Comparing tension for medium scale (32") and long scale (34"), with the string tuned to the same note on both scales:

$$T_M/T_L = [W(32)^2F^2/96.6] / [W(34)^2F^2/96.6] = (32)^2 / (34)^2 = 0.8858$$

So for a given long scale string with tension T_L , the calculation for tension on a medium scale bass is:

$$T_M = 0.8858T_L$$