Start by tuning the "X" strings until taut and up to the desired pitch. Then count four frets up the scale to the X+4 position, and fret the unisons there. Now tune the middle string (the third string on a four-string dulcimer) to that note but an octave lower than what you hear. To indicate that its value is an octave below X fretted on the fourth fret, it's circled. In this example, the fourth string (the bass string) is to be tuned to an octave below the unison strings when they are tuned to X; therefore, simply tune the bass string to the same note you tuned the unisons to, but make the bass note an octave lower. To show its relationship to the unisons, it's circled to indicate octave.

If you find it terribly difficult to hear the octavefifth tone you need for tuning the middle string, you might try tuning the bass string after you've tuned your unisons, and then fret the bass string on the fourth fret. This will give you the correct note for the middle string, although its sound-color will be somewhat different.

In brief, the rules to follow are:

- 1 Tune the unisons first to any sound you like, and call that note you've tuned to "X."
- 2 Always tune to octave values.
- **3** Always tune the other strings to the unisons at the octave values indicated by X+1, X+2, X+3, etc., as designated in the Range and Tuning Guide. And in the case of the Lydian and Locrian modes, note the exceptions to the general rule.

STRING TONE TOLERANCES AND RANGE AN TUNING GUIDE

Together, these two charts will enable you to customize the sound of your dulcimer. If your instrument is shorter or longer than the twenty-four-inch string length used to compute these tonal ranges, you'll

