THREE BASIC UNITS OF MEASURE ARE USED FOR LUMBER:

1. **BOARD MEASURE** - is the term to indicate that the board foot is the unit of measurement for most lumber items. A board foot is defined as a piece one inch thick (nominal) by one foot wide (nominal) by one foot long (actual) or its equivalent. For instance a 2 x 6 also equals one board foot for each foot of length.

   **Board footage** is calculated by multiplying the nominal thickness in inches (T) by the nominal width in inches (W) by the actual length in feet (L) and dividing by 12. The formula is: \( \frac{T \times W \times L}{12} = \text{Board ft.} \)

   Where:
   - \( T \) = nominal thickness in inches
   - \( W \) = nominal width in inches
   - \( L \) = length in feet

2. **SURFACE MEASURE** - is the square feet on the surface of a piece of lumber. Surface measure is calculated without regard to thickness of the piece, i.e. 2 x 12 board, one foot long equals one square foot. The formula is: \( \frac{W \times L}{12} = \text{Surface Measure} \)

3. **LINEAL MEASURE** - is the total length in feet of a board, regardless of its thickness or width, i.e. a 2 x 14 one foot long is one lineal foot.

To calculate the board footage for sizes and lengths other than those given in the table:

A. To calculate the **board feet per lineal foot** of an uncommon size: \( \frac{T \times W}{12} = \text{Board feet per lineal foot} \)

   Example: A lineal foot of 3 x 5 = 1.25 bf.

B. To calculate the total board feet in an uncommon length of a particular size:

   1.) Use the board footage formula or

   2.) Use the board feet per lineal foot (either from your calculation, i.e. 1.25 bf. for a 3 x 5, or from column 3 in the table times the length).

   Examples: 17' of 3 x 5 = 1.25 bf. x 17 = 21.25 bf.
   17' of 3 x 6 = 1.5 bf. x 17 = 25.5 bf.

Note: For multiple pieces, multiply the board feet in one piece times the number of pieces (as in problem 2 opposite.)
USING THE HEADINGS

EXPLANATION OF TABLE HEADINGS

<table>
<thead>
<tr>
<th>LINEAL FEET PER BOARD FOOT</th>
<th>NOMINAL SIZE</th>
<th>BOARD FEET PER LINEAL FOOT</th>
<th>BOARD FEET (rounded to the nearest 100th)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>6' 8' 10' 12' 14' 16' 18' 20'</td>
</tr>
</tbody>
</table>

**LINEAL FEET PER BOARD FOOT** - the lineal feet, in a given size piece, need to equal one board foot.

**NOMINAL SIZE** - is the standard size designation for lumber, used for convenience.

**BOARD FEET PER LINEAL FOOT** - the number of board feet per one foot of length in a given size.

**BOARD FEET** - the columns in this section give board footages for corresponding lengths and sizes. Lengths are given from 6' - 20' in 2' increments. Sizes are read from the NOMINAL SIZES column in the middle of the table.

**Sample Problems**

1. **How to use the tabulated values for lengths** given in the table.
   
   Problem: How many board feet (bf.) in 8, 2 x 4's, 12' long?
   Solution: Find 2 x 4 nominal size on the chart. Read across the column, under the 12' heading and find 8 bf.
   
   \[8 \text{ bf.} \times 8 \text{ pieces} = 64 \text{ bf.}\]

2. **How to find the total board footage for multiples of uncommon lengths** of standard sizes.
   
   Problem: How many bf. are in 10, 4 x 8's 20' long?
   Solution: Find the board feet per lineal foot (column for 4 x 8; it's 2.6667. Multiply times 20' in length, times 10 pieces.
   
   \[2.6667 \times 20 \times 10 = 533.33 \text{ bf.}\]

3. **How to convert price per 1000 bf. to price per lineal foot.**
   
   Example: $225.00/1000 bf. for 2 x 8's
   Problem: What is the price per lineal foot?
   Solution: Find the lineal foot per board foot for 2 x 8's in the far left column of the table; its 750.
   
   \[\frac{225}{750} = .225\]
   \[.225 \times 1.3333 = .30 \text{ per lineal foot}\]

4. **How to convert price per 1000 bf. to price per piece.**
   
   Example: $255.00/1000 bf. for 2 x 12's
   Problem: What is the price for 10' of 2 x 12'?
   Solution: Find bf. for 10' of 2 x 12 in the table; its 20 bf.
   
   \[\frac{255}{20} = .1275\]
   \[20 \text{ bf.} \times .1275 = \$ 2.55 \text{ (price for 10' of 2x12)}\]