

Transitioning from Worked Examples to Problems via Fading

How to calculate board feet

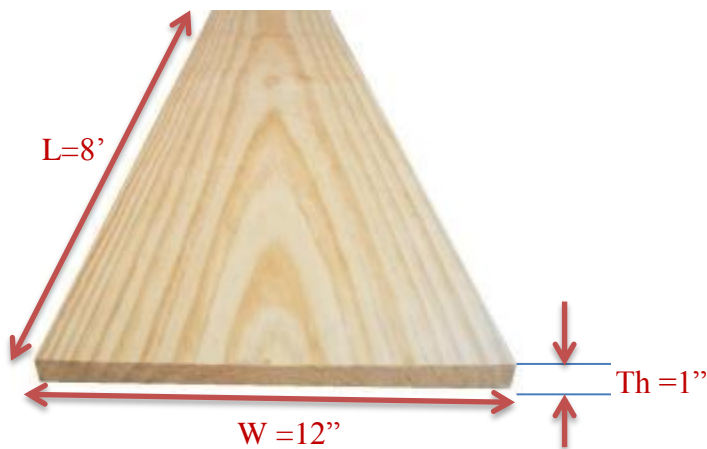
Board foot is the standard unit of measure in the North American lumber industry.

A board foot is the equivalent of a piece of wood 1 inch thick, 12 inches wide, and 1 foot long. In other words, a board foot is 1 square foot of lumber, 1 inch thick.

Board feet = Cost of board = board feet x cost per board foot

Thickness (in inches) x Width (in inches) x Length (in feet) \div 12.

1. **Problem:** Calculate the board feet of a piece of board 1 inch thick x 12 inches wide x 8 feet long



Solution:

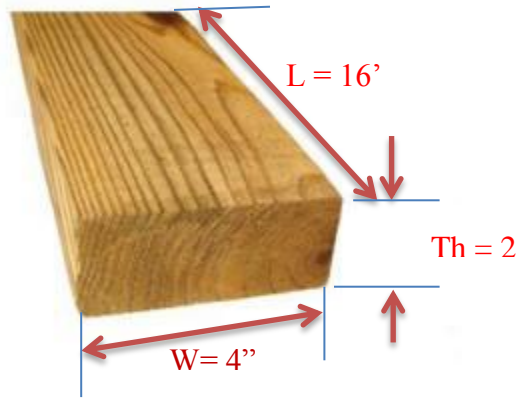
- Board feet = Thickness (inches) x width (inches) x Length (feet) \div 12

$$\text{Board feet} = 1'' \times 12'' \times 8' \div 12$$

$$= 8 \text{ (bf) or 8 square feet}$$

2. **Problem:** Calculate the board feet of 24 pieces of boards each measuring 2"x4"x16'.

If each (bf) cost \$6.50, what is the total cost of the boards?



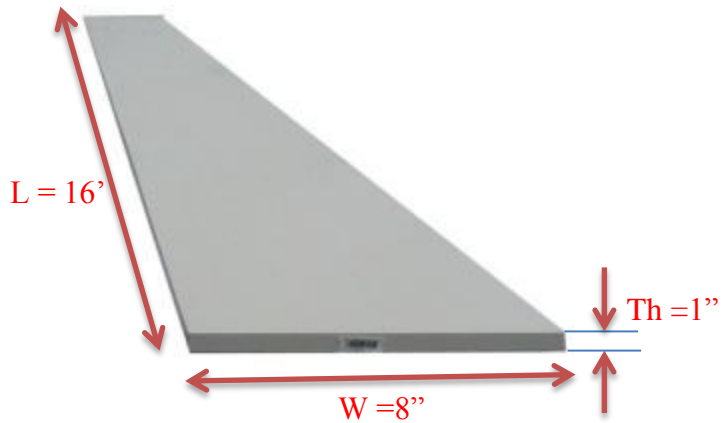
Solution

- First step: Board feet= Thickness x width x length x no of pieces÷12
=2"x4'x16'x24÷12
= 256 bf
- Second step: Cost of lumber = board feet x cost per board feet
= 256 (bf) x \$6.50

Place answer here:

3. **Problem:** Calculate the board feet for the following piece of board.

If each board feet cost \$ 13.22, what is the cost of the board?



Solution: Board feet = $T'' \times W'' \times L' \div 12$

First step: Bf =

Ans =

Step 2: Cost of board = Cost per board feet x board feet (bf)

Ans:

4. **Problem:** You have decided to build a deck on your new home 96 inches wide x 16 feet long, using the standard 2 inch thick boards. How many pieces of 2"x 4" x 16" boards will you need. If each board feet cost \$8. 58 what will be the total cost of the boards?



2" x 4" x 16'

Solution

- First step:

Place answer here

- Second step

Place answer here:

- Third step

Place answer here:

This model depicts the procedure for calculating board feet. It is an illustration of the transition from worked examples to problems via fading. The first example is completed by the instructor, followed by a second example in which most of the steps are worked, however, the learner is required to complete one or two of the steps. The technique is to progress with a few more worked examples then gradually allowing the learner to complete more of the steps in the procedure. Eventually the learner is allowed to complete all the steps of similar problems on his own.