



Problem of the Week

Problem B and Solution

Jafar's New Floor

Problem

Jafar is laying new hardwood flooring in his rectangular living room, which has an area of 66 m^2 . Each box of flooring has 8 identical wooden planks, and each plank has an area of 0.2 m^2 .

- Assuming that there is no waste, how many planks will he need to cover the floor of his living room?
- If Jafar wants to buy an extra 10% for waste, how many boxes of flooring does he need to buy?
- If each box costs \$74.50 and sales tax is 15%, what will be the total cost of the flooring in part (b)?

Solution

- The area of the living room floor is 66 m^2 and each plank has an area of 0.2 m^2 . So the total number of planks needed is $66 \div 0.2 = 330$.
- The extra amount is 10% of 330, which is $0.10 \times 330 = 33$ planks.
So in total Jafar wants to buy $330 + 33 = 363$ planks. Since there are 8 planks in each box, the number of boxes required is $363 \div 8 = 45.375$.
Therefore, he should buy 46 boxes.
- Jafar wants to buy 46 boxes, and each box costs \$74.50. The total cost before tax is $46 \times \$74.50 = \3427 .
The amount of tax is 15% of \$3427, which is $0.15 \times \$3427 = \514.05 .
Therefore, the total cost of the flooring is $\$3427 + \$514.05 = \$3941.05$.