

# MATHCOUNTS® Problem of the Week Archive

***It's Moving Day – March 18, 2019***

## ***Problems & Solutions***

Jessie and Marcus are moving from their apartment to a new condominium. Marcus is responsible for moving all his belongings and the living room furniture, while Jessie is responsible for moving all the kitchen items, including the dining table and chairs, and his personal belongings.

Marcus hires the Four Brothers Moving Company. This moving company charges \$3.50 per cubic foot, based on the amount of space in the moving truck occupied by the items being moved. Once all the items that Marcus is responsible for moving are loaded onto the moving truck, the movers calculate that these items occupy 540 ft<sup>3</sup>. If there are no other fees, what will the Four Brothers Moving Company charge Marcus by for his move?

*Marcus' items occupy 540 ft<sup>3</sup>. At a rate of \$3.50 per cubic foot, the Four Brothers Moving Company will charge Marcus  $540 \times 3.50 = \mathbf{\$1890}$ .*

Jessie hires the Three Cousins Moving Company. For this company, moving costs are determined by the total weight of the items being moved. Jessie estimates that he had 2200 pounds worth of stuff to move and is quoted a price of \$1210. The moving company charges \$0.75 for each pound that the actual weight is over the estimated weight. The quoted price will be reduced if the actual weight is less than the estimated weight. Once all the items that Jessie is responsible for moving are loaded into the moving truck, the actual weight is calculated to be 2762 pounds. If there are no other fees, what will the Three Cousins Moving Company charge Jessie for his move?

*We are told that Jessie's items have an actual weight of 2762 pounds. Essentially, Jessie was quoted \$1210 for the first 2200 pounds. He will be charged \$0.75 per pound for the additional  $2762 - 2200 = 562$  pounds. That's an additional  $562 \times 0.75 = \$421.50$ . So, the total amount that the Three Cousins Moving Company will charge Jessie is  $1210 + 421.50 = \mathbf{\$1631.50}$ .*

If the items that Jessie is responsible for moving occupy 385 ft<sup>3</sup>, how much would he have saved by hiring Four Brothers instead of Three Cousins?

*Jessie's move took up 385 ft<sup>3</sup>. Based on this, the Four Brothers Moving Company would have charged Jessie  $385 \times 3.50 = \$1347.50$ . That's  $1631.50 - 1347.50 = \mathbf{\$284}$  less than the amount that the Three Cousins Moving Company charges.*

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