PSSA Open Ended Prep – Geometry #1

Please read the given situation carefully. Then, answer each question that follows. If you are asked to EXPLAIN something, please do so using COMPLETE SENTENCES!

Situation:

Craig wants to put new carpet in his bedroom. The Carpet Store charges $1.29 per square foot of carpet. The Carpet Store is currently offering a 15% discount on all carpet IF you allow them to install it for you. The Carpet Store charges $60 to install the carpet. A diagram of Craig’s room is below:

Part A) What is the area of Craig’s bedroom? Show all work and EXPLAIN what you did and why.

\[
\text{Area (Big rectangle)} \rightarrow LW \\
10 \times 14 \\
140 \text{ ft}^2
\]

\[
\text{Area (Small rectangle)} \rightarrow LW \\
3 \times 6 \\
18 \text{ ft}^2
\]

Total Area = 140 + 18

\[158 \text{ ft}^2\]

I used the dotted line to “cut” the figure into two rectangles. I found the area of each rectangle by multiplying its length and width. Then I added those two areas to find the total area.
Part B) Craig is very handy around the house, and wants to put the carpet in himself. How much money will he save if he puts the carpet in himself, instead of having the Carpet Store do it for him? (HINT: Calculate both situations and then find the difference.) Show all work.

Cost of carpet: \( \$158 \times 1.29 \) 
\( \text{total area} \) \( \text{cost per square foot} \)

\( \$203.82 \)

If he has Carpet Store install:

15% OFF \( \frac{203.82 \times .15}{30.5730} \)

installation charge 
\( +60.00 \)

\( \$233.25 \)

Savings: \( 233.25 - 203.82 = \$29.43 \)