1. Measure each rectangle with your inch ruler, and label the dimensions. Use the area model to find the area.

a. \( \frac{3}{4} \text{ in} \times 1 \text{ in} = \frac{3}{4} \text{ in}^2 \)

b. \( \frac{1}{4} \text{ in} \times \frac{3}{16} \text{ in} = \frac{3}{64} \text{ in}^2 \)

\( \frac{3}{16} + \frac{3}{16} = \frac{6}{16} = \frac{3}{8} \text{ in}^2 \)

\( \frac{3}{8} + \frac{3}{8} + \frac{3}{8} = \frac{9}{8} \text{ in}^2 \)

\( \frac{9}{8} + \frac{3}{8} = \frac{12}{8} = 1 \frac{4}{8} \text{ in}^2 \)

\( 1 \frac{4}{8} = 1 \frac{3}{8} \text{ in}^2 \)

\( \frac{3}{8} + \frac{3}{8} + \frac{3}{8} = \frac{9}{8} \text{ in}^2 \)

\( \frac{9}{8} + \frac{3}{8} = \frac{12}{8} = 1 \frac{4}{8} \text{ in}^2 \)

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\( 1 \frac{4}{8} = 1 \frac{3}{8} \text{ in}^2 \)
2. Find the area of rectangles with the following dimensions. Explain your thinking using the area model.

a. \( \frac{3}{4} \text{yd} \times \frac{1}{4} \text{yd} \)
   \[
   \text{Area} = \frac{2}{16} \text{yd}^2 = \frac{1}{8} \text{yd}^2
   \]

b. \( 2 \frac{1}{2} \text{ft} \times 1 \frac{1}{4} \text{ft} \)
   \[
   \text{Area} = \frac{2}{8} \text{ft}^2 + \frac{2}{8} \text{ft}^2 = \frac{5}{8} \text{ft}^2
   \]

3. Kelly buys a tarp to cover the area under her tent. The tent is 4 feet wide and has an area of 31 square feet. The tarp she bought is 5 \( \frac{1}{2} \) feet by 5 \( \frac{3}{4} \) feet. Can the tarp cover the area under Kelly's tent? Draw a model to show your thinking.

   \[\text{Tarp:} \quad 5 \text{ ft} + \frac{1}{2} \text{ ft} + \frac{25}{4} \text{ ft}^2 + \frac{5}{4} \text{ ft}^2 + \frac{25}{8} \text{ ft}^2\]
   \[
   = 25 + \frac{9}{4} + 25 + 5 \frac{1}{2} = 30 \frac{3}{8} \text{ ft}^2
   \]
   The area of the tarp is 30 \( \frac{3}{8} \) ft\(^2\), so \textbf{No, it will not cover the 31 ft}^2 \text{area of the tent.}

4. Shannon and Leslie want to carpet a 16 \( \frac{1}{2} \) ft by 16 \( \frac{1}{2} \) ft square room. They can't put carpet under an entertainment system that juts out. (See the drawing below.)

   a. In square feet, what is the area of the space with no carpet?

   \[\text{Area of the space with no carpet is} \quad 64 \text{ ft}^2\]

   b. How many square feet of carpet will Shannon and Leslie need to buy?

   \[\text{Total Area:} \quad 16 \frac{1}{2} \text{ ft} \\
   \text{Area:} \quad 256 + 16 + \frac{1}{4} \]
   \[
   = 272 \frac{1}{4} \text{ ft}^2
   \]
   \[\text{Take Away Small Area:} \quad 272 \frac{1}{4} - 6 \frac{1}{4} = 266 \text{ ft}^2
   \]
   They need to buy 266 ft\(^2\) of carpet.