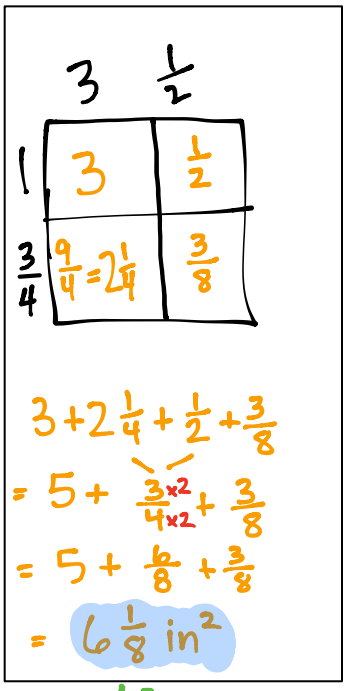
Name _____ Date _____

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

a.



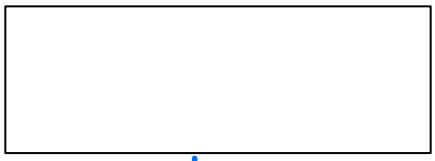
$3+2\frac{1}{4}+\frac{1}{2}+\frac{3}{8}$

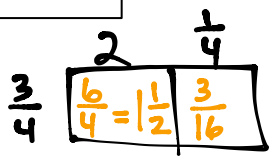
$= 5+\frac{3}{4}\times\frac{2}{2}+\frac{3}{8}$

$= 5+\frac{6}{8}+\frac{3}{8}$

$= 6\frac{1}{8}\ in^2$

b.



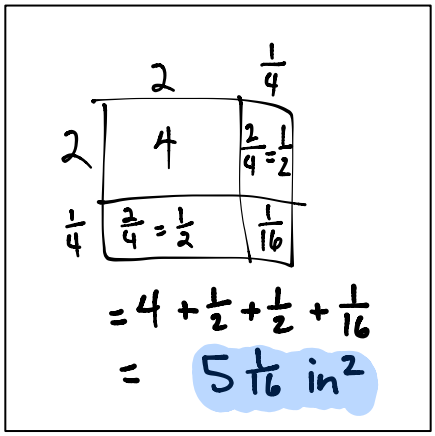


$1\frac{1}{2}\times\frac{8}{8}+\frac{3}{16}$

$= 1\frac{8}{16}+\frac{3}{16}$

$= 1\frac{11}{16}\ in^2$

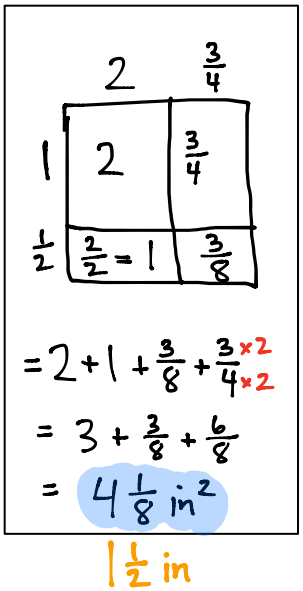
c.



$= 4+\frac{1}{2}+\frac{1}{2}+\frac{1}{16}$

$= 5\frac{1}{16}\ in^2$

d.

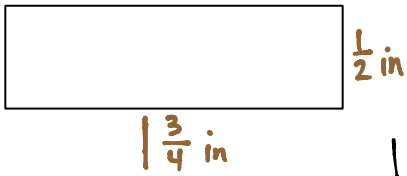


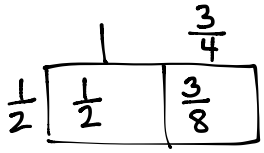
$= 2+1+\frac{3}{8}+\frac{3}{4}\times\frac{2}{2}$

$= 3+\frac{3}{8}+\frac{6}{8}$

$= 4\frac{1}{8}\ in^2$

e.



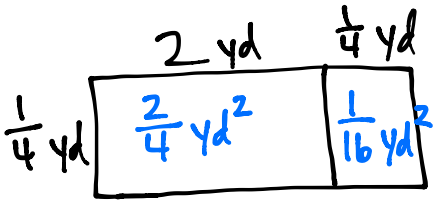


$= \frac{1}{2}\times\frac{4}{4}+\frac{3}{8}$

$= \frac{4}{8}+\frac{3}{8} = \frac{7}{8}\ in^2$

2. Find the area. Explain your thinking using the area model.

a. $2\frac{1}{4}\text{ yd} \times \frac{1}{4}\text{ yd}$

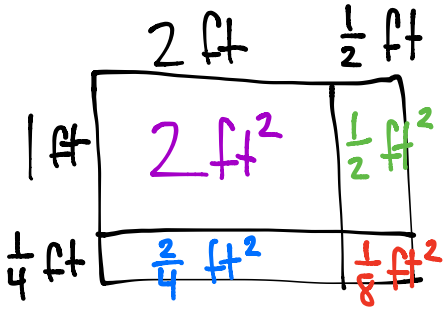


$= \frac{2}{4} \times \frac{4}{4} + \frac{1}{16}$

$= \frac{8}{16} + \frac{1}{16}$

$= \frac{9}{16}\text{ yd}^2$

b. $2\frac{1}{2}\text{ ft} \times 1\frac{1}{4}\text{ ft}$

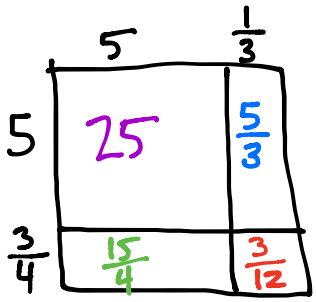


$= 2 + \frac{1}{2} + \frac{2}{4} + \frac{1}{8}$

$= 2 + 1 + \frac{1}{8}$

$= 3\frac{1}{8}\text{ ft}^2$

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 $5\frac{1}{3}$ feet by $5\frac{3}{4}$ feet. Can the tarp cover the area under Kelly's tent? Draw a model to show your thinking.



$5\frac{1}{3} \times 5\frac{3}{4}$

$= 25 + \frac{5}{3} + \frac{15}{4} + \frac{3}{12}$

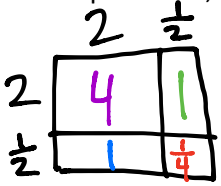
$= 25 + 1\frac{2}{3} + 3\frac{3}{4} + \frac{1}{4}$

$= 30\frac{2}{3}\text{ ft}^2$

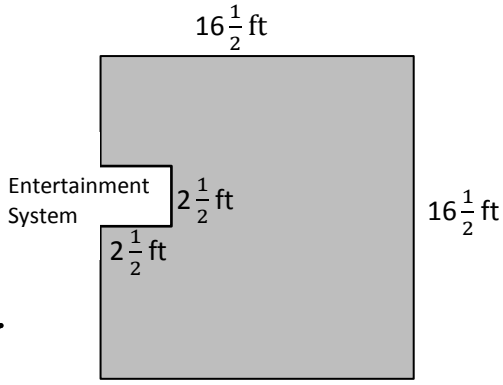
The tarp is not big enough.

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.)

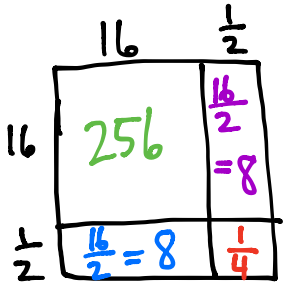
a. In square feet, what is the area of the space with no carpet?



$2\frac{1}{2} \times 2\frac{1}{2} = 6\frac{1}{4}\text{ ft}^2$



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



$16\frac{1}{2} \times 16\frac{1}{2} = 256 + 8 + 8 + \frac{1}{4}$

$= 272\frac{1}{4}\text{ ft}^2$

$272\frac{1}{4} - 6\frac{1}{4} = 266\text{ ft}^2$

They need to buy 266 ft^2 of carpet.