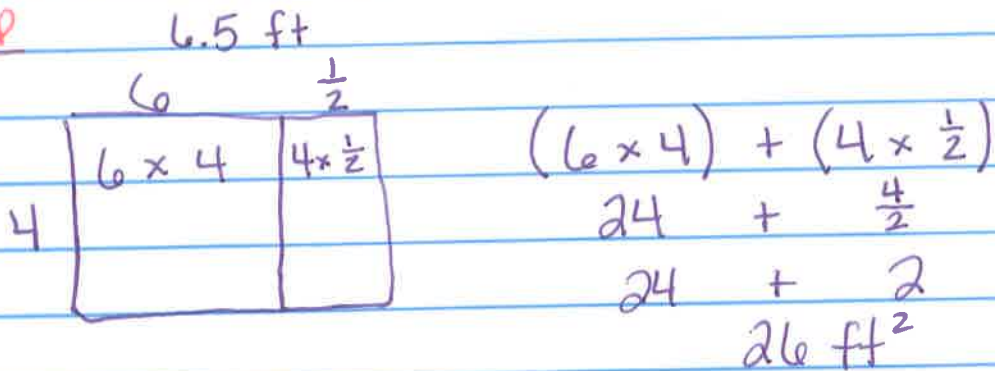


## M5-L11 - Finding Area

AP

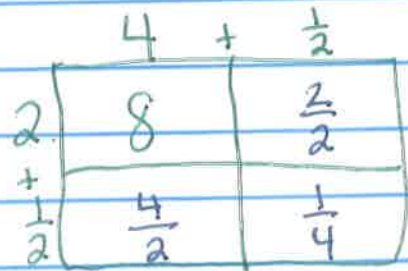


Mrs Golden needs 26 squared silver pieces.  
No, she will not have any fractional pieces left over because it requires 26 whole pieces.

Area = length  $\times$  width

Rectangle A:  $4\frac{1}{2} \times 2\frac{1}{2}$

$$4\frac{1}{2} \times 2\frac{1}{2}$$



$$(4 \times 2) + (\frac{1}{2} \times 2) + (4 \times \frac{1}{2}) + (\frac{1}{2} \times \frac{1}{2})$$

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

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

$$11\frac{1}{4} \text{ units}^2$$

Rectangle B:

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

	$3 + \frac{3}{4}$	
1	3	$\frac{3}{4}$
$+\frac{3}{4}$	$2\frac{1}{4}$	$\frac{9}{16}$

$$(3 \times 1) + (1 \times \frac{3}{4}) + (3 \times \frac{3}{4}) + (\frac{3}{4} \times \frac{3}{4})$$

$$3 + \frac{3}{4} + \frac{9}{4} + \frac{9}{16}$$

$$3 + \frac{3}{4} + 2\frac{1}{4} + \frac{9}{16}$$

$$5 + 1 + \frac{9}{16} = 6\frac{9}{16} \text{ units}^2$$

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Rectangle C:

$$1\frac{1}{2} \times \frac{3}{4}$$

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

$$(\frac{3}{4} \times 1) + (\frac{3}{4} \times \frac{1}{2})$$

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

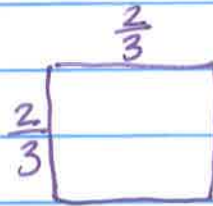
$$(\frac{3}{4} = \frac{6}{8}) + (\frac{3}{8} = \frac{3}{8})$$

$$\begin{array}{r} 1 \\ 8 \overline{) 9} \\ \underline{8} \\ 1 \end{array}$$

$$\frac{9}{8} = 1\frac{1}{8} \text{ units}^2$$

Rectangle D:

$$\frac{2}{3} \times \frac{2}{3} = \frac{4}{9} \text{ units}^2$$



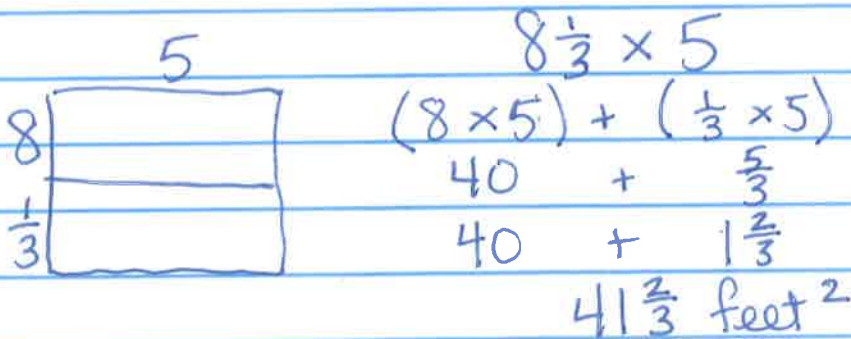
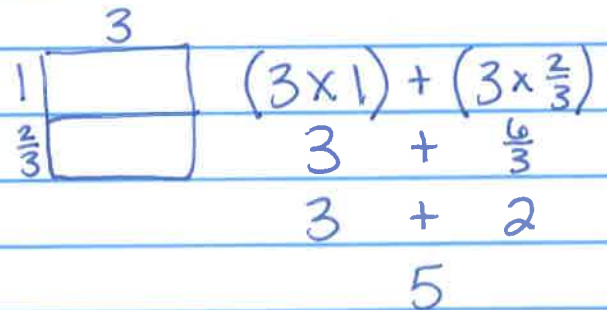
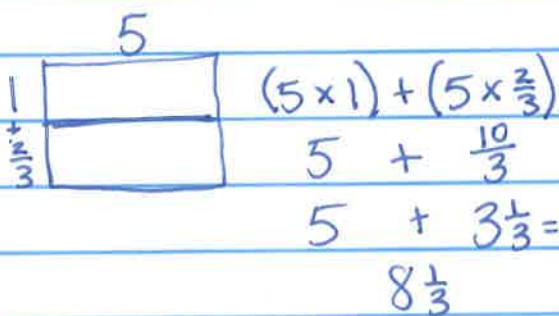
Colleen:

$$l = 1\frac{2}{3} \times 5 =$$

$$w = 1\frac{2}{3} \times 3 =$$

$$l = 1\frac{2}{3} \times 5 = 8\frac{1}{3}$$

$$w = 1\frac{2}{3} \times 3 = 5$$








Caroline:

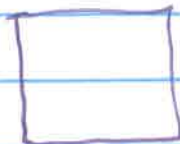
$$l = 3\frac{1}{3} \times 5 = 16\frac{2}{3}$$

$$w = 3\frac{1}{3} \times 3 = 10$$

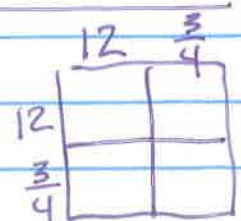
<u>length</u>		<u>width</u>	
$3\frac{1}{3} \times 5$		$3\frac{1}{3} \times 3$	
5	3	3	$\frac{1}{3}$
	$(5 \times 3) + (5 \times \frac{1}{3})$		$(3 \times 3) + (3 \times \frac{1}{3})$
	15 + $\frac{5}{3}$		9 + $\frac{3}{3}$
	15 + $1\frac{2}{3}$		10 ft
	$16\frac{2}{3}$ feet		

$$16\frac{2}{3} \times 10$$

10	16	$(16 \times 10) + (\frac{2}{3} \times 10)$
	$160 + \frac{20}{3}$	
	160 + $6\frac{2}{3}$	
	$166\frac{2}{3}$ feet <sup>2</sup>	



$$P = 51 \text{ in.}$$



$$\begin{array}{r} 12 \\ 4 \overline{) 51} \\ \underline{4} \\ 11 \\ \underline{8} \\ 3 \end{array}$$

$$12\frac{3}{4} \times 12\frac{3}{4}$$

$$(12 \times 12) + (12 \times \frac{3}{4}) + (12 \times \frac{3}{4}) + (\frac{3}{4} \times \frac{3}{4})$$
$$144 + \frac{36}{4} + \frac{36}{4} + \frac{9}{16}$$

$$162\frac{9}{16} \text{ squared inches}$$

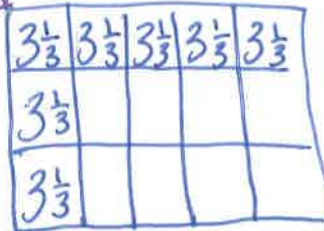
5. Colleen and Caroline each built a rectangle out of square tiles placed in 3 rows of 5. Colleen used tiles that measured  $1\frac{2}{3}$  cm in length. Caroline used tiles that measured  $3\frac{1}{3}$  cm in length.

- a. Draw the girls' rectangles, and label the lengths and widths of each.

Colleen



Caroline



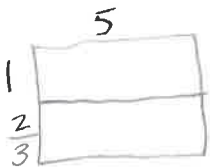
- b. What are the areas of the rectangles in square centimeters?

Colleen -  $l \times w$

$$l = 1\frac{2}{3} \times 5$$

$$w = 1\frac{2}{3} \times 3$$

Caroline =  $l \times w$



$$(5 \times 1) + (5 \times \frac{2}{3})$$

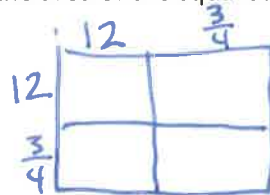
- c. Compare the areas of the rectangles.

$$41\frac{2}{3} \text{ cm}^2 < 166\frac{2}{3} \text{ cm}^2$$

6. A square has a perimeter of 51 inches. What is the area of the square?

$$\begin{array}{r} 12 \\ 4 \overline{) 51} \\ \underline{4} \phantom{0} \\ 11 \\ \underline{8} \\ 3 \end{array}$$

$$12\frac{3}{4} \times 12\frac{3}{4}$$



$$(12 \times 12) + (12 \times \frac{3}{4}) + (\frac{3}{4} \times 12) + (\frac{3}{4} \times \frac{3}{4})$$

$$144 + \frac{36}{4} + \frac{36}{4} + \frac{9}{16}$$

$$144 + 9 + 9 + \frac{9}{16} = 162\frac{9}{16} \text{ in}^2$$