

M5L11 - Area of Rectangle

4.3.19

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

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

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

$$11\frac{1}{4}$$

$$4\frac{1}{2} \times 2\frac{1}{2} = \frac{9}{2} \times \frac{5}{2} = \frac{45}{4} = 11\frac{1}{4}$$

$$\begin{array}{r} 11 \\ 4 \overline{)45} \\ \underline{4} \\ 05 \\ \underline{4} \\ 1 \end{array}$$

Rectangle B:

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

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

$$3 + \left(\frac{3}{4} + \frac{9}{4}\right) + \frac{9}{16}$$

$$3 + \frac{12}{4} + \frac{9}{16}$$

$$3 + 3 + \frac{9}{16} = \boxed{6 \frac{9}{16}}$$

Rectangle C

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

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

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

$$\frac{3}{4} \times \frac{2}{2} = \frac{6}{8}$$

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

$$\frac{9}{8} = \frac{1}{8}$$

Rectangle D:

$$\frac{3}{4} \times \frac{1}{2} = \frac{3}{8} \text{ ~~mm~~ }^2$$

Colleen: $A = l \times w = A = 8\frac{1}{3} \times 5$

length: $5 \times 1\frac{2}{3}$
 $(5 \times 1) + (5 \times \frac{2}{3})$
 $5 + \frac{10}{3}$
 $5 + 3\frac{1}{3}$
 $8\frac{1}{3}$

width: $3 \times 1\frac{2}{3}$
 $(3 \times 1) + (3 \times \frac{2}{3})$
 $3 + \frac{6}{3}$
 $3 + 2$
 5

Caroline $A = 16\frac{2}{3} \times 10$

length: $5 \times 3\frac{1}{3}$
 $(5 \times 3) + (5 \times \frac{1}{3})$
 $15 + \frac{5}{3}$
 $15 + 1\frac{2}{3}$
 $16\frac{2}{3}$

width: $3 \times 3\frac{1}{3}$
 $(3 \times 3) + (3 \times \frac{1}{3})$
 $9 + \frac{3}{3}$
 $9 + 1$
 10

Colleen:

$$8\frac{1}{3} \times 5$$

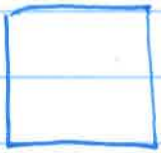
$$(5 \times 8) + (5 \times \frac{1}{3})$$
$$40 + \frac{5}{3}$$
$$40 + 1\frac{2}{3}$$
$$41\frac{2}{3} \text{ cm}^2$$

Caroline:

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

$$(10 \times 16) + (10 \times \frac{2}{3})$$
$$160 + \frac{20}{3}$$
$$160 + 6\frac{2}{3}$$
$$166\frac{2}{3} \text{ cm}^2$$

$$41\frac{2}{3} < 166\frac{2}{3}$$



51

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

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

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

	12	$\frac{3}{4}$
12	144	$\frac{36}{4}$
$\frac{3}{4}$	$\frac{36}{4}$	$\frac{9}{16}$

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

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

$$\boxed{162\frac{9}{16} \text{ cm}^2}$$

Name _____

Date _____

Draw the rectangle and your tiling.

Write the dimensions and the units you counted in the blanks.

Then, use multiplication to confirm the area. Show your work.

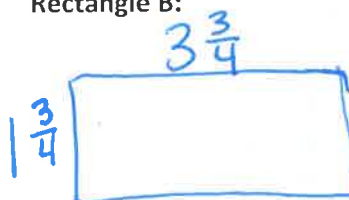
1. Rectangle A:



Rectangle A is

 $4\frac{1}{2}$ units long $2\frac{1}{2}$ units wideArea = $11\frac{1}{4}$ units²

2. Rectangle B:



Rectangle B is

 $3\frac{3}{4}$ units long $1\frac{3}{4}$ units wideArea = _____ units²

3. Rectangle C:



Rectangle C is

 $1\frac{1}{2}$ units long $\frac{3}{4}$ units wideArea = $1\frac{1}{8}$ units²

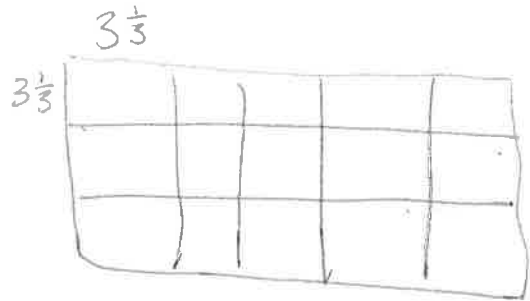
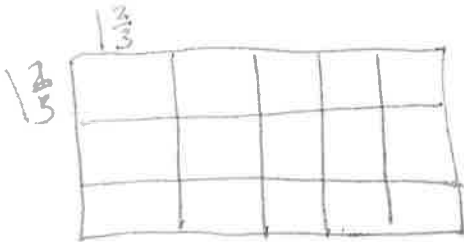
4. Rectangle D:

Rectangle D is

 $\frac{3}{4}$ units long $\frac{1}{2}$ units wideArea = _____ units²

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.



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

c. Compare the areas of the rectangles.

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