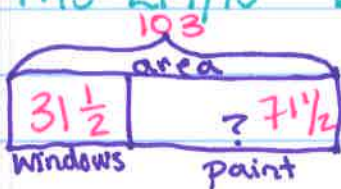


4.8.19

M5: L14/15 - Word Problems w/ Area



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

| | | |
|---------------|----------------|---------------|
| | 3 | $\frac{1}{2}$ |
| 4 | 12 | 2 |
| $\frac{1}{2}$ | $1\frac{1}{2}$ | $\frac{1}{4}$ |

$12 + 2 + 1\frac{1}{2} + \frac{1}{4}$

$15 + \frac{3}{4} + \frac{1}{4} = 15\frac{3}{4}$

$15\frac{3}{4} \times 2$

$(15 \times 2) + (\frac{3}{4} \times 2)$

$30 + \frac{6}{4}$

$31\frac{1}{2} \text{ ft}^2$

Wall: $12\frac{7}{8} \times 8$

$(12 \times 8) + (\frac{7}{8} \times 8)$

$96 + \frac{56}{8}$

$96 + 7 = 103 \text{ ft}^2$

$$\begin{array}{r}
 2 \\
 103\frac{2}{2} \\
 - 31\frac{1}{2} \\
 \hline
 71\frac{1}{2} \text{ ft}^2
 \end{array}$$

#3

A: $25\frac{1}{4} \times 15\frac{1}{2}$

| | | |
|---------------|----------------|----------------|
| | 25 | $\frac{1}{4}$ |
| 15 | 375 | $\frac{15}{4}$ |
| $\frac{1}{2}$ | $\frac{25}{2}$ | $\frac{1}{8}$ |

$$375 + 3\frac{3}{4} + 12\frac{1}{2} + \frac{1}{8}$$

$$390 + \frac{6}{8} + \frac{4}{8} + \frac{1}{8}$$

$$390 + \frac{11}{8}$$

$$391\frac{3}{8} \text{ ft}^2$$

$$\begin{array}{r} 375 \\ 3 \\ \hline 12 \\ \hline 390 \end{array}$$

B: $18\frac{1}{2} \times 19$

$$(18 \times 19) + (\frac{1}{2} \times 19)$$

$$342 + \frac{19}{2}$$

$$342 + 9\frac{1}{2}$$

$$351\frac{1}{2} \text{ ft}^2$$

$$\begin{array}{r} 7 \\ 18 \\ , 19 \\ \hline 162 \\ \hline 180 \\ \hline 342 \end{array}$$

C: $16\frac{3}{4} \times 21$

$$(21 \times 16) + (21 \times \frac{3}{4})$$

$$336 + \frac{63}{4}$$

$$336 + 15\frac{3}{4}$$

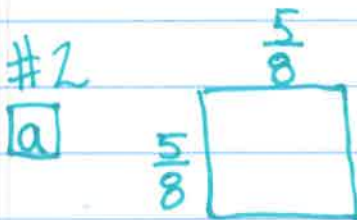
$$351\frac{3}{4} \text{ ft}^2$$

$$\begin{array}{r} 15 \\ 4 \overline{)63} \\ \underline{4} \\ 23 \\ \underline{20} \\ 3 \end{array}$$

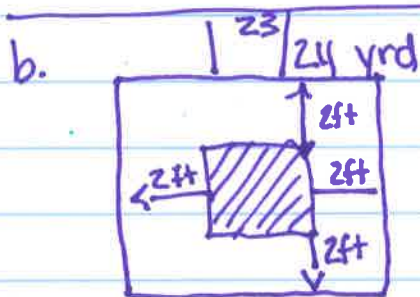
$$\begin{array}{r} 391\frac{3}{8} \\ 351\frac{1}{2} \\ 351\frac{3}{4} \\ \hline 1093 \\ + 1 \end{array}$$

1094 5/8

1094 5/8 ft²



$$\frac{5}{8} \times \frac{5}{8} = \frac{25}{64} \text{ yrd}^2$$



Length / Width

$$4 \text{ ft} = \frac{1}{3} \text{ yrds}$$

$$\frac{1}{3} \times \frac{8}{8} = \frac{8}{24}$$

$$\frac{1}{3} + \frac{5}{8} =$$

$$+ \frac{5}{8} \times \frac{3}{3} = \frac{15}{24}$$

$$1 \frac{23}{24} \times 4$$

$$(4 \times 1) + \left(\frac{23}{24} \times 4\right)$$

$$4 + \frac{92}{24}$$

$$4 + 3 \frac{20}{24} = 7 \frac{5}{6}$$

$$24 \overline{) 92} \begin{array}{r} 3 \\ 72 \\ \hline 20 \end{array}$$

$$\begin{array}{r} 1 \quad 23 \quad 24 \\ \times 4 \quad 3 \\ \hline 92 \quad 72 \end{array}$$

$$7 \frac{5}{6} \text{ yrd} = \text{--- ft}$$

E $7 \frac{5}{6} \times 1 \text{ yrd}$

C $7 \frac{5}{6} \times 3 \text{ ft}$

A $23 \frac{1}{2} \text{ ft}$

$$7 \frac{5}{6} \times 3$$

$$(7 \times 3) + \left(\frac{5}{6} \times 3\right)$$

$$21 + \frac{15}{6}$$

$$21 + 2 \frac{1}{2}$$

e. $A = \left| \frac{23}{24} \text{ yrds} \right| \times \left| \frac{23}{24} \text{ yrds} \right|$

| | | |
|-----------------|-----------------|-------------------|
| | 1 | $\frac{23}{24}$ |
| 1 | $\frac{23}{24}$ | $\frac{529}{576}$ |
| $\frac{23}{24}$ | $\frac{23}{24}$ | $\frac{529}{576}$ |

$$\frac{23}{24} \times \frac{23}{24} = \frac{529}{576}$$

$$+ \frac{23}{24} + \frac{23}{24} + \frac{529}{576}$$

$$+ \frac{46}{24} + \frac{529}{576}$$

$$\left| \frac{23}{24} \text{ yrd} \right| = \text{--- ft}$$

$$\left| \frac{23}{24} \times 3 \right|$$

$$(1 \times 3) + \left(\frac{23}{24} \times 3 \right)$$

$$3 + 2 \frac{21}{24}$$

$$3 + \frac{69}{24}$$

$$5 \frac{7}{8} \times 5 \frac{7}{8}$$

| | | |
|---------------|----------------|-----------------|
| | 5 | $\frac{7}{8}$ |
| 5 | 25 | $\frac{35}{8}$ |
| $\frac{7}{8}$ | $\frac{35}{8}$ | $\frac{49}{64}$ |

$$25 + 4 \frac{3}{8} + 4 \frac{3}{8} + \frac{49}{64}$$

$$33 + \frac{6}{8} + \frac{49}{64}$$

$$33 + \frac{48}{64} + \frac{49}{64} = \frac{97}{64}$$

$$34 \frac{33}{64}$$

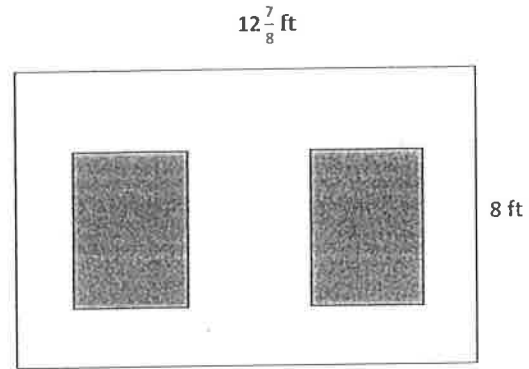
$$\begin{array}{r} 2 \\ 24 \overline{) 69} \\ \underline{48} \\ 21 \end{array}$$

$$\begin{array}{r} 1 \\ 64 \overline{) 97} \\ \underline{64} \\ 33 \end{array}$$

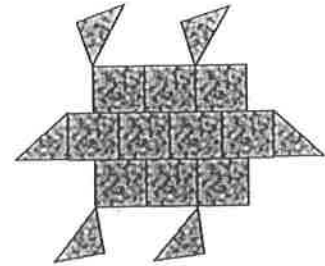
Name _____

Date _____

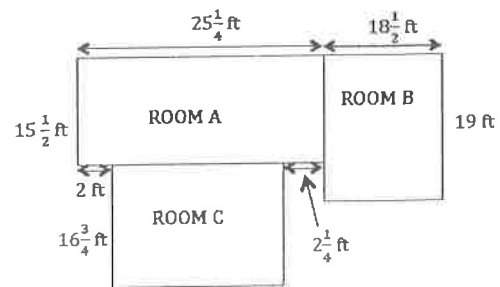
1. George decided to paint a wall with two windows. Both windows are $3\frac{1}{2}$ -ft by $4\frac{1}{2}$ -ft rectangles. Find the area the paint needs to cover.



2. Joe uses square tiles, some of which he cuts in half, to make the figure below. If each square tile has a side length of $2\frac{1}{2}$ inches, what is the total area of the figure?



3. All-In-One Carpets is installing carpeting in three rooms. How many square feet of carpet are needed to carpet all three rooms?



4. Mr. Johnson needs to buy sod for his front lawn.
- a. If the lawn measures $36\frac{2}{3}$ ft by $45\frac{1}{6}$ ft, how many square feet of sod will he need?
- b. If sod is only sold in whole square feet, how much will Mr. Johnson have to pay?

Sod Prices

| Area | Price per Square Foot |
|------------------------|-----------------------|
| First 1,000 sq ft | \$0.27 |
| Next 500 sq ft | \$0.22 |
| Additional square feet | \$0.19 |

5. Jennifer's class decides to make a quilt. Each of the 24 students will make a quilt square that is 8 inches on each side. When they sew the quilt together, every edge of each quilt square will lose $\frac{3}{4}$ of an inch.
- a. Draw one way the squares could be arranged to make a rectangular quilt. Then, find the perimeter of your arrangement.
- b. Find the area of the quilt.

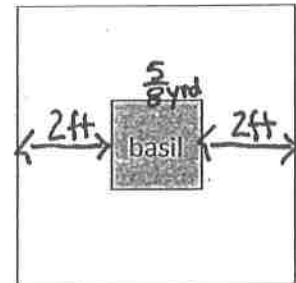
Name _____

Date _____

1. The length of a flowerbed is 4 times as long as its width. If the width is $\frac{3}{8}$ meter, what is the area?

2. Mrs. Johnson grows herbs in square plots. Her basil plot measures $\frac{5}{8}$ yd on each side.

- a. Find the total area of the basil plot.



- b. Mrs. Johnson puts a fence around the basil. If the fence is 2 ft from the edge of the garden on each side, what is the perimeter of the fence in feet?

c. What is the total area, in square feet, that the fence encloses?

3. Janet bought 5 yards of fabric $2\frac{1}{4}$ -feet wide to make curtains. She used $\frac{1}{3}$ of the fabric to make a long set of curtains and the rest to make 4 short sets.

a. Find the area of the fabric she used for the long set of curtains.

b. Find the area of the fabric she used for each of the short sets.