1. John tiled some rectangles using square units. Sketch the rectangles if necessary. Fill in the missing information, and then confirm the area by multiplying.

   a. Rectangle A:

   Rectangle A is

   \[ \text{3 units long } \quad \text{2\frac{1}{2} units wide} \]

   Area = \[ \frac{7}{2} \text{ units}^2 \]

   b. Rectangle B:

   Rectangle B is

   \[ \text{4 units long } \quad \text{2\frac{4}{4} units wide} \]

   Area = \[ 9 \text{ units}^2 \]

   c. Rectangle C:

   Rectangle C is

   \[ \text{3\frac{3}{4} units long } \quad \text{4 units wide} \]

   Area = \[ 3 \text{ units}^2 \]
d. Rectangle D:

```
  2
1
3/4
```

Rectangle D is

2 units long, \(\frac{3}{4}\) units wide

Area = \(\frac{3}{2}\) units\(^2\)

2. Rachel made a mosaic from different color rectangular tiles. Three tiles measured \(3\frac{1}{2}\) inches \(\times\) 3 inches. Six tiles measured 4 inches \(\times\) \(3\frac{1}{4}\) inches. What is the area of the whole mosaic in square inches?

\[
\begin{align*}
\text{Area of each tile} & : 9 \times 3\frac{1}{2} = (9 \times 3) + (9 \times \frac{1}{2}) \\
& = 27 + \frac{9}{2} = 27 + 4\frac{1}{2} = 31\frac{1}{2} \text{ in}^2
\end{align*}
\]

\[
\begin{align*}
\text{Area of each tile} & : 8 \times 9\frac{3}{4} = (8 \times 9) + (8 \times \frac{3}{4}) \\
& = 72 + \frac{24}{4} = 72 + 6 = 78 \text{ in}^2
\end{align*}
\]

3. A garden box has a perimeter of \(27\frac{1}{2}\) feet. If the length is 9 feet, what is the area of the garden box?

\[
\begin{align*}
\text{Perimeter} & = 1 + 1 + w + w \\
27\frac{1}{2} \text{ ft} & = 9 + 9 + w + w \\
27\frac{1}{2} \text{ ft} & = 18 + \frac{w}{2} = \frac{8}{2} + \frac{w}{2} = 3w + 9 = 3w + 2\frac{1}{4}
\end{align*}
\]

Area = \(1 \times w = 9 \times 4\frac{1}{4} = 4\frac{1}{4} \times 4\frac{1}{4} = (9 \times 4) + (9 \times \frac{1}{4}) = 36 + \frac{9}{4} = 36 + 2\frac{1}{4} = 38\frac{1}{4} \text{ ft}^2\)

Lesson 10: Find the area of rectangles with whole-by-mixed and whole-by-fractional number side lengths by tiling, record by drawing, and relate to fraction multiplication.