1. Arabelle solved the following division problem by drawing an area model.

$$\begin{array}{c|c|c}
4 & 1600 & 200 \\
\hline
1000 & 50 & 7
\end{array}$$

a. What division problem did she solve? $1828 \div 4 = 457$

b. Show a number bond to represent Arabelle's area model, and represent the total length using the distributive property.

$$\begin{array}{c}
1828 \\
\hline
1600 & 200 & 28
\end{array}$$

$$(1600 \div 4) + (200 \div 4) + (28 \div 4)$$
$$= 400 + 50 + 7$$
$$= 457$$

2. a. Solve $816 \div 4$ using the area model. There is no remainder in this problem.

$$\begin{array}{c|c|c}
4 & 800 & 16 \\
\hline
200
\end{array}$$

$$816 \div 4 = 204$$

b. Draw a number bond and use a written method to record your work from (a).

$$\begin{array}{c}
816 \\
\hline
800 & 16
\end{array}$$

$$(800 \div 4) + (16 \div 4)$$
$$= 200 + 4$$
$$= 204$$

EUREKA MATH
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Lesson 33: Explain the connection of the area model of division to the long division algorithm for three- and four-digit dividends.
3. a. Draw an area model to solve $549 \div 3$.

```
\[ \begin{array}{c|cccc}
 & 100 & 80 & \frac{\_}{3} \\
3 & 300 & 240 & 9 \\
\hline
& \text{183} \\
\end{array} \]
```

b. Draw a number bond to represent this problem.

```
\( \begin{array}{c}
\text{549} \\
\text{300} \\
\text{240} \\
\text{9} \\
\end{array} \)
```

\[
(300 \div 3) + (240 \div 3) + (9 \div 3) = 100 + 80 + 3 = 183
\]

c. Record your work using the long division algorithm.

```
\[
\begin{array}{c|ccc}
\text{3} & \text{549} \\
\hline
\text{3} & 183 \\
\hline
\text{2} & 24 \\
\hline
\text{2} & 16 \\
\hline
\text{1} & 0 \\
\hline
\end{array}
\]
```

4. a. Draw an area model to solve $2,762 \div 2$.

```
\[ \begin{array}{c|cccc}
 & 2000 & 800 & 80 & 1 \\
2 & 2000 & 600 & 160 & 2 \\
\hline
& \text{1381} \\
\end{array} \]
```

b. Draw a number bond to represent this problem.

```
\( \begin{array}{c}
\text{2762} \\
\text{2000} \\
\text{600} \\
\text{160} \\
\end{array} \)
```

\[
(2000 \div 2) + (600 \div 2) + (160 \div 2) + (2 \div 2) = 1000 + 300 + 80 + 1 = 1381
\]

c. Record your work using the long division algorithm.

```
\[
\begin{array}{c|ccc}
\text{2} & \text{2762} \\
\hline
\text{2} & 1381 \\
\hline
\text{2} & 07 \\
\hline
\text{2} & 16 \\
\hline
\text{2} & 02 \\
\hline
\text{2} & 0 \\
\hline
\end{array}
\]
```

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**Lesson 33:** Explain the connection of the area model of division to the long division algorithm for three- and four-digit dividends.