Subtract 4-Digit Numbers with Regrouping

We can't subtract 4 tens from 3 tens, so we need to regroup one hundred as 10 tens.

$$\begin{array}{r} 5\ 1\ \overset{\boxed{0}\ \boxed{13}}{\cancel{3}}\ 9 \\ -\ 2\ 2\ \boxed{4}\ 4 \\ \hline \end{array}$$

$$\begin{array}{r} 5\ \overset{0}{\cancel{1}}\ \overset{13}{\cancel{3}}\ 9 \\ -\ 2\ 2\ 4\ 4 \\ \hline 5 \end{array}$$

We can't subtract 2 hundreds from 0 hundreds, so we need to regroup 1 thousand as 10 hundreds. Complete.

$$\begin{array}{r} \overset{0}{\cancel{5}}\ \overset{13}{\cancel{1}}\ \cancel{3}\ 9 \\ -\ 2\ \boxed{2}\ 4\ 4 \\ \hline 9\ 5 \end{array}$$

$$\begin{array}{r} \overset{4}{\cancel{5}}\ \overset{\boxed{10}\ 0}{\cancel{1}}\ \cancel{3}\ 9 \\ -\ 2\ 2\ 4\ 4 \\ \hline 9\ 5 \end{array}$$

Check by adding.

$$\begin{array}{r} +\ 2\ 2\ 4\ 4 \\ \hline \end{array}$$

1. Subtract. Check by adding.

a.
$$\begin{array}{r} 5\ 0\ 9\ 1 \\ -\ 5\ 1\ 0 \\ \hline \end{array} \qquad + \underline{\hspace{3cm}}$$

b.
$$\begin{array}{r} 2\ 9\ 1\ 3 \\ -\ 1\ 7\ 1\ 6 \\ \hline \end{array} \qquad + \underline{\hspace{3cm}}$$

c.
$$\begin{array}{r} 8\ 4\ 0\ 2 \\ -\ 1\ 3\ 7\ 8 \\ \hline \end{array} \qquad + \underline{\hspace{3cm}}$$

d.
$$\begin{array}{r} 6\ 8\ 8\ 1 \\ -\ 9\ 1\ 1 \\ \hline \end{array} \qquad + \underline{\hspace{3cm}}$$

e.
$$\begin{array}{r} 6\ 5\ 4\ 6 \\ -\ 3\ 4\ 9\ 0 \\ \hline \end{array} \qquad + \underline{\hspace{3cm}}$$

f.
$$\begin{array}{r} 9\ 0\ 8\ 0 \\ -\ 5\ 0\ 2\ 5 \\ \hline \end{array} \qquad + \underline{\hspace{3cm}}$$

g.
$$\begin{array}{r} 4\ 5\ 0\ 9 \\ -\ 1\ 1\ 1\ 6 \\ \hline \end{array} \qquad + \underline{\hspace{3cm}}$$

h.
$$\begin{array}{r} 6\ 2\ 0\ 9 \\ -\ 2\ 0\ 6\ 5 \\ \hline \end{array} \qquad + \underline{\hspace{3cm}}$$

Math Mammoth Place Value 3 (Blue Series)

Regrouping with zeros

We can't subtract 5 ones from 4, so we need to regroup.	There are no tens nor hundreds, so we need to regroup 1 thousand as 10 hundreds.	Then we regroup 1 hundred as 10 tens.	Lastly, we regroup 1 ten as 10 ones. There are already 4 ones, so we get 14 ones. Subtract.

```
                    8 10              9                9   9
                                    8 10 10          8 10 10 14
    9 0 0 4         9 0 0 4          9 0 0 4          9 0 0 4
  – 3 6 5 5       – 3 6 5 5        – 3 6 5 5        – 3 6 5 5
  ─────────       ─────────        ─────────        ─────────
```

2. Subtract. Check by adding.

a.
```
    4 0 0 2
  – 2 2 1 6       + _____
  ─────────
```

b.
```
    6 1 2 0
  – 3 8 4 4       + _____
  ─────────
```

c.
```
    4 3 0 3
  – 4 0 0 8       + _____
  ─────────
```

d.
```
    7 0 1 1
  –   9 1 2       + _____
  ─────────
```

e.
```
    5 0 1 3
  – 2 4 9 0       + _____
  ─────────
```

f.
```
    9 0 0 1
  – 4 0 7 5       + _____
  ─────────
```

g.
```
    3 3 0 0
  – 1 4 0 1       + _____
  ─────────
```

h.
```
    8 0 0 5
  – 1 7 7 9       + _____
  ─────────
```

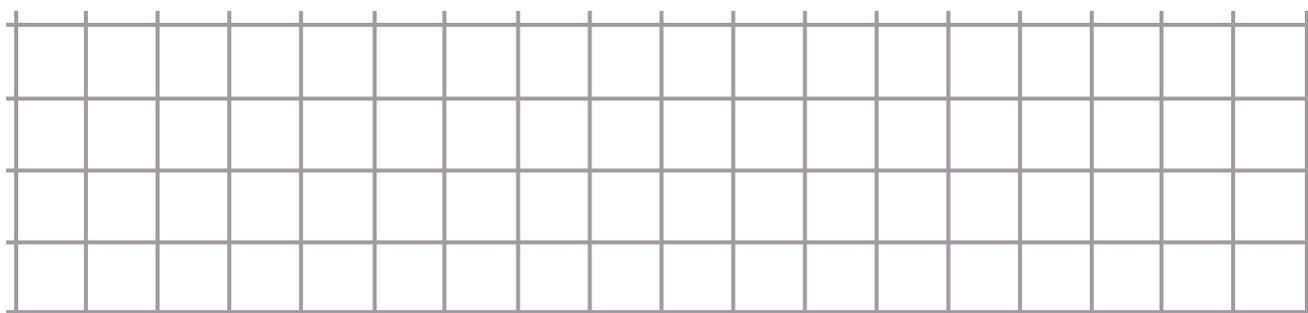Math Mammoth Place Value 3 (Blue Series)

3. Solve.

a. 4,908 – 203 – 1,420
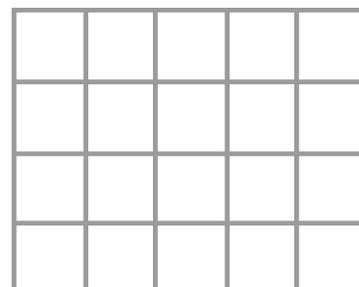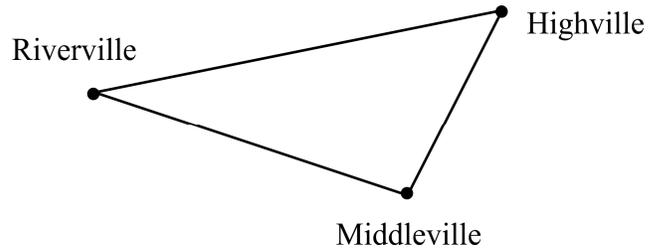
b. 9,000 – (3,450 + 593)
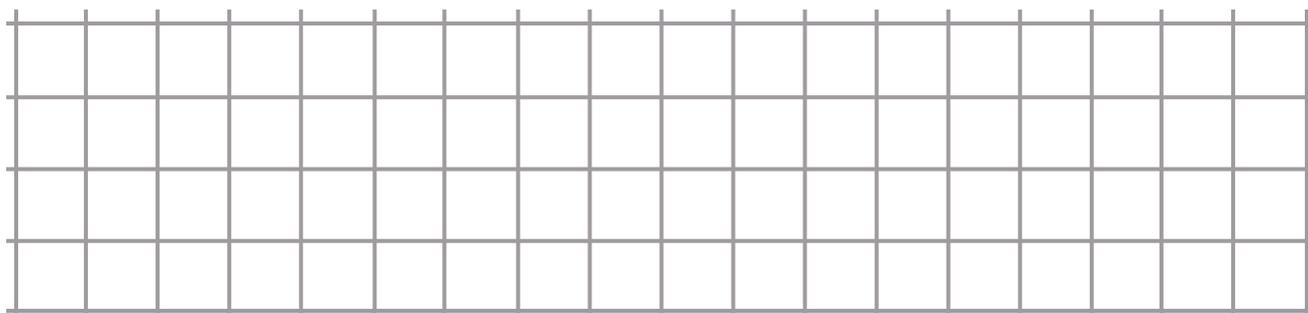
c. 3,924 + 291 + 2,932 – 2,910

**d.** Solve what number the triangle represents:

△ – 5,480 = 1,027.

4. Three villages form a triangle. The distance between Riverville and Middleville is 3,200 meters, between Middleville and Highville 1,900 m, and between Highville and Riverville 4,200 m.

Riverville

Highville

Middleville

a. Write the distances between the villages on the map.

b. What is the total distance from Riverville to Highville to Middleville and back to Riverville?
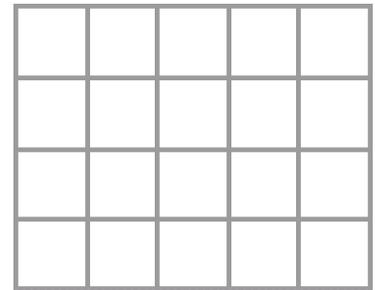
c. How many more meters is a round trip from Middleville to Riverville and back than from Highville to Middleville and back?
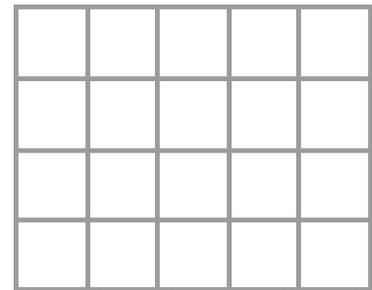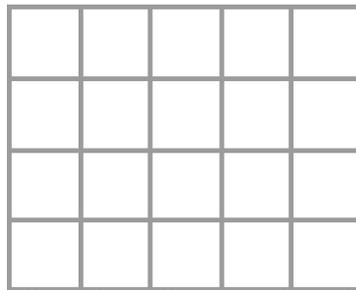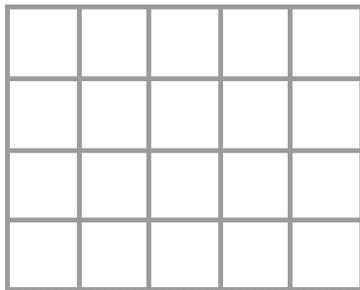
Puzzle Corner What numbers are missing?

```
  3 □ 5 □          8 9 □ □          6 □ □ 9          □ □ 0 3
- □ 1 □ 9        - □ □ 3 6        - □ 2 2 □        - 2 8 □ □
-------          -------          -------          -------
  1 6 6 4          4 7 1 8          2 7 8 4          4 1 3 6
```