1. Label the place value charts. Fill in the blanks to make the following equations true. Draw disks in the place value chart to show how you got your answer using arrows to show any bundling.

   a. \(10 \times 3 \text{ ones} = 30 \text{ ones} = 30 \text{ or } 3 \text{ tens}

   \[
   \begin{array}{c|c|c|c}
   \text{hundreds} & \text{tens} & \text{ones} & \text{tenths} \\
   \hline
   & & 0 & 0 \\
   \hline
   \end{array}
   \]

   b. \(10 \times 2 \text{ tens} = 20 \text{ tens} = 200 \text{ or } 2 \text{ hundreds}

   \[
   \begin{array}{c|c|c|c}
   \text{thousands} & \text{hundreds} & \text{tens} & \text{ones} \\
   \hline
   & & 0 & 0 \\
   \hline
   \end{array}
   \]

   c. \(4 \text{ hundreds} \times 10 = 400 \text{ hundreds} = 4000 \text{ or } 4 \text{ thousands}

   \[
   \begin{array}{c|c|c|c}
   \text{thousands} & \text{hundreds} & \text{tens} & \text{ones} \\
   \hline
   0 & 0 & 0 & 0 \\
   \hline
   \end{array}
   \]

2. Complete the following statements using your knowledge of place value:

   a. 10 times as many as 1 ten is \(10\) tens.

   b. 10 times as many as \(3\) tens is 30 tens or \(3\) hundreds.

   c. \textbf{Ten times as many} as 9 hundreds is 9 thousands.

   d. \(2\) thousands is the same as 20 hundreds.

Use pictures, numbers, or words to explain how you got your answer for Part (d).
3. Matthew has 30 stamps in his collection. Matthew’s father has 10 times as many stamps as Matthew. How many stamps does Matthew’s father have? Use numbers or words to explain how you got your answer.

$$30 \times 10 = 300$$

Matthew's father has 10 times as many stamps as Matthew.

So, if Matthew has 30, and Matthew's father has 10 times

$$30 \times 10 = 300$$

Matthew's father has 300 stamps.

4. Jane saved $800. Her sister has 10 times as much money. How much money does Jane’s sister have? Use numbers or words to explain how you got your answer.

$$800 \times 10 = 8,000$$ Jane’s sister has 10 times as much or $8,000.

5. Fill in the blanks to make the statements true.

a. 2 times as much as 4 is 8.

b. 10 times as much as 4 is 40.

c. 500 is 10 times as much as 50.

d. 6,000 is 10 times as much as 600.

6. Sarah is 9 years old. Sarah’s grandfather is 90 years old. Sarah’s grandfather is how many times as old as Sarah?

$$9 \times 10 = 90$$ yrs

Sarah’s grandfather is 10 times as old as Sarah.
### Multiply or divide.

<table>
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<tr>
<th></th>
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<th># Correct</th>
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<td>3 x 10 =</td>
<td>30</td>
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<td>30 30 ÷ 10 =</td>
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<tr>
<td>9</td>
<td>10 ÷ 10 =</td>
<td>1</td>
<td>31 __ x 10 = 60</td>
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<tr>
<td>10</td>
<td>40 ÷ 10 =</td>
<td>4</td>
<td>32 __ x 10 = 70</td>
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<td>80 ÷ 10 =</td>
<td>8</td>
<td>38 80 ÷ 10 =</td>
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<td>70 ÷ 10 =</td>
<td>7</td>
<td>39 11 x 10 =</td>
</tr>
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<td>18</td>
<td>90 ÷ 10 =</td>
<td>9</td>
<td>40 110 ÷ 10 =</td>
</tr>
<tr>
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<td>6</td>
<td>41 30 ÷ 10 =</td>
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<td>__ x 10 = 50</td>
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<td>43 14 x 10 =</td>
</tr>
<tr>
<td>22</td>
<td>__ x 10 = 10</td>
<td>1</td>
<td>44 140 ÷ 10 =</td>
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### Lesson 1: Sprint 4.1

#### A Story of Units

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<th># Correct</th>
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<td>35 80 ÷ 10 =</td>
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<td>18</td>
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<td>40 110 ÷ 10 =</td>
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<tr>
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<td>100 ÷ 10 = 10</td>
<td>41 120 x 10 =</td>
<td>1200</td>
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<td>21</td>
<td>___ x 10 = 10</td>
<td>43 13 x 10 =</td>
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</tr>
<tr>
<td>22</td>
<td>___ x 10 = 50</td>
<td>44 130 ÷ 10 =</td>
<td>13</td>
</tr>
</tbody>
</table>

**EUREKA MATH**

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1. As you did during the lesson, label and represent the product or quotient by drawing disks on the place value chart.

<table>
<thead>
<tr>
<th>hundred</th>
<th>ten</th>
<th>thousands</th>
<th>ten thousands</th>
<th>hundreds</th>
<th>tens</th>
<th>ones</th>
<th>tenths</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. $10 \times 2$ thousands = 20 thousands = 2 ten thousands

\[
x \times 10
\]

\[
20
\]

b. $10 \times 3$ ten thousands = 30 ten thousands = 3 hundred thousands

\[
x \times 10
\]

\[
30
\]

c. 4 thousands $\div 10$ = 40 hundreds $\div 10$ = 4 hundreds

\[
\div 10
\]

\[
4
\]
2. Solve for each expression by writing the solution in unit form and in standard form.

<table>
<thead>
<tr>
<th>Expression</th>
<th>Unit form</th>
<th>Standard Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>10 \times 6 tens</td>
<td>60 tens</td>
<td>600</td>
</tr>
<tr>
<td>7 hundreds \times 10</td>
<td>70 hundreds</td>
<td>7,000</td>
</tr>
<tr>
<td>3 thousands \div 10</td>
<td>3 hundreds</td>
<td>300</td>
</tr>
<tr>
<td>6 ten thousands \div 10</td>
<td>6 thousands</td>
<td>6,000</td>
</tr>
<tr>
<td>10 \times 4 thousands</td>
<td>40 thousands</td>
<td>40,000</td>
</tr>
</tbody>
</table>

3. Solve for each expression by writing the solution in unit form and in standard form.

<table>
<thead>
<tr>
<th>Expression</th>
<th>Unit form</th>
<th>Standard Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>(4 tens 3 ones) \times 10</td>
<td>4 hundreds 3 tens</td>
<td>430</td>
</tr>
<tr>
<td>(2 hundreds 3 tens) \times 10</td>
<td>2 thousands 3 hundreds</td>
<td>2,300</td>
</tr>
<tr>
<td>(7 thousands 8 hundreds) \times 10</td>
<td>7 ten thousands 8 thousands</td>
<td>78,000</td>
</tr>
<tr>
<td>(6 thousands 4 tens) \div 10</td>
<td>6 hundreds 4 ones</td>
<td>604</td>
</tr>
<tr>
<td>(4 ten thousands 3 tens) \div 10</td>
<td>4 thousands 3 ones</td>
<td>4,003</td>
</tr>
</tbody>
</table>

4. Explain how you solved 10 \times 4 thousands. Use a place value chart to support your explanation.

10 \times 4 thousands = 4 ten thousands = 40,000

---

EUREKA MATH

Lesson 2: Recognize a digit represents 10 times the value of what it represents if the place to its right.

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5. Explain how you solved \((4 \text{ ten thousands } 3 \text{ tens}) \div 10\). Use a place value chart to support your explanation.

\[
\begin{array}{c|c|c|c|c}
\text{ten thousands} & \text{thousands} & \text{hundreds} & \text{tens} & \text{ones} \\
\hline
0 & 0 & 0 & 0 & 0 \\
\hline
0 & 0 & 0 & 0 & 0 \\
\hline
\end{array}
\]

You shift to the right because you are dividing.

6. Jacob saved 2 thousand dollar bills, 4 hundred dollar bills, and 6 ten dollar bills to buy a car. The car costs 10 times as much as he has saved. How much does the car cost?

\[
\begin{align*}
(2 \text{ thousand} + \& 4 \text{ hundred} + \& 6 \text{ ten}) 
\times 10 &= \\
(2,000 + 400 + 60) 
\times 10 &= \\
2,460 
\times 10 &= \\
24,600 &= \\
\text{The car cost} &= \$24,600.
\end{align*}
\]

7. Last year the apple orchard experienced a drought and didn’t produce many apples. But this year, the apple orchard produced 45 thousand Granny Smith apples and 9 hundred Red Delicious apples, which is 10 times as many apples as last year. How many apples did the orchard produce last year?

\[
\begin{align*}
(45 \text{ thousand} + \& 9 \text{ hundred}) 
\div 10 &= \\
45,900 
\div 10 &= \\
4,590 &= \\
\text{The orchard produced 4,590 apples last year.}
\end{align*}
\]

8. Planet Ruba has a population of 1 million aliens. Planet Zamba has 1 hundred thousand aliens.
   a. How many more aliens does Planet Ruba have than Planet Zamba?

   \[
   1 \text{ million } - 1 \text{ hundred thousand } = \frac{10 \text{ hundred thousand}}{1 \text{ hundred thousand}} - 1 \text{ hundred thousand} \\
   \frac{9 \text{ hundred thousand}}{1 \text{ hundred thousand}} \\
   \text{Planet Ruba has 9 hundred thousand more aliens than Planet Zamba.}
   \]
   b. Write a sentence to compare the populations for each planet using the words \(10 \text{ times as many}\).

   \text{Planet Ruba has 10 times as many aliens as Planet Zamba.}
1. Rewrite the following numbers including commas where appropriate:
   a. 1,234
   b. 12,345
   c. 123,456
   d. 1,234,567
   e. 12,345,678,901

2. Solve each expression. Record your answer in standard form.

<table>
<thead>
<tr>
<th>Expression</th>
<th>Standard Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>5 tens + 5 tens</td>
<td>10 tens = 100</td>
</tr>
<tr>
<td>3 hundreds + 7 hundreds</td>
<td>1,008</td>
</tr>
<tr>
<td>400 thousands + 600 thousands</td>
<td>1,000,000</td>
</tr>
<tr>
<td>8 thousands + 4 thousands</td>
<td>12,000</td>
</tr>
</tbody>
</table>

3. Represent each addend with place value disks in the place value chart. Show the composition of larger units from 10 smaller units. Write the sum in standard form.

   a. 4 thousands + 11 hundreds = 5,100

   b. 24 ten thousands + 11 thousands = 251,000
4. Use digits or disks on the place value chart to represent the following equations. Write the product in standard form.

a. \(10 \times 3 \text{ thousands} = \underline{30 \text{ thousands}} = \underline{30,000}\)

How many thousands are in the answer? \(30\)

b. \((3 \text{ ten thousands} 2 \text{ thousands}) \times 10 = \underline{320,000}\)

How many thousands are in the answer? \(320\)

c. \((32 \text{ thousands} 1 \text{ hundred 4 ones}) \times 10 = \underline{321,040}\)

How many thousands are in your answer? \(321\)

5. Lee and Gary visited South Korea. They exchanged their dollars for South Korean bills. Lee received 15 ten thousand South Korean bills. Gary received 150 thousand bills. Use disks or numbers on a place value chart to compare Lee and Gary's money.

Lee's

<table>
<thead>
<tr>
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<th>ten thousands</th>
</tr>
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<tbody>
<tr>
<td>1</td>
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</tbody>
</table>

Gary's

<table>
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<tr>
<th>hundred thousands</th>
<th>ten thousands</th>
<th>thousands</th>
</tr>
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<tbody>
<tr>
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Lee + Gary received the same amount of money $150,000.
### A

Multiply.

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# Correct ___
### B

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<td>$6 \times 3 = 18$</td>
<td>33</td>
<td>$3 \times 6 = 18$</td>
</tr>
<tr>
<td>12</td>
<td>$3 \times 7 = 21$</td>
<td>34</td>
<td>$3 \times 4 = 12$</td>
</tr>
<tr>
<td>13</td>
<td>$7 \times 3 = 21$</td>
<td>35</td>
<td>$3 \times 9 = 27$</td>
</tr>
<tr>
<td>14</td>
<td>$3 \times 8 = 24$</td>
<td>36</td>
<td>$3 \times 2 = 6$</td>
</tr>
<tr>
<td>15</td>
<td>$8 \times 3 = 24$</td>
<td>37</td>
<td>$3 \times 7 = 21$</td>
</tr>
<tr>
<td>16</td>
<td>$3 \times 9 = 27$</td>
<td>38</td>
<td>$3 \times 3 = 9$</td>
</tr>
<tr>
<td>17</td>
<td>$9 \times 3 = 27$</td>
<td>39</td>
<td>$3 \times 8 = 24$</td>
</tr>
<tr>
<td>18</td>
<td>$3 \times 10 = 30$</td>
<td>40</td>
<td>$11 \times 3 = 33$</td>
</tr>
<tr>
<td>19</td>
<td>$10 \times 3 = 30$</td>
<td>41</td>
<td>$3 \times 11 = 33$</td>
</tr>
<tr>
<td>20</td>
<td>$1 \times 3 = 3$</td>
<td>42</td>
<td>$13 \times 3 = 39$</td>
</tr>
<tr>
<td>21</td>
<td>$10 \times 3 = 30$</td>
<td>43</td>
<td>$3 \times 13 = 39$</td>
</tr>
<tr>
<td>22</td>
<td>$2 \times 3 = 6$</td>
<td>44</td>
<td>$12 \times 3 = 36$</td>
</tr>
</tbody>
</table>
1. a. On the place value chart below, label the units and represent the number 90,523.

<table>
<thead>
<tr>
<th>Millions</th>
<th>Thousands</th>
<th>Ten Thousands</th>
<th>Ten Hundreds</th>
<th>Hundreds</th>
<th>Tens</th>
<th>Ones</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>9</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>5</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

   b. Write the number in word form.

   Ninety Thousand, Five Hundred Twenty-Three

   c. Write the number in expanded form.

   \[ 90,000 + 500 + 20 + 3 \]

2. a. On the place value chart below, label the units and represent the number 905,203.

<table>
<thead>
<tr>
<th>Million's</th>
<th>Thousands</th>
<th>Ten Thousands</th>
<th>Ten Hundreds</th>
<th>Hundreds</th>
<th>Tens</th>
<th>Ones</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>9</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>5</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0</td>
<td>3</td>
</tr>
</tbody>
</table>

   b. Write the number in word form.

   Nine Hundred Five Thousand, Two Hundred Three

   c. Write the number in expanded form.

   \[ 900,000 + 5,000 + 200 + 3 \]
3. Complete the following chart:

<table>
<thead>
<tr>
<th>Standard Form</th>
<th>Word Form</th>
<th>Expanded Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>2,408</td>
<td>two thousand, four hundred eighty</td>
<td>2,000 + 400 + 8</td>
</tr>
<tr>
<td>20,482</td>
<td>twenty thousand, four hundred eighty-two</td>
<td>20,000 + 400 + 80 + 2</td>
</tr>
<tr>
<td>64,106</td>
<td>sixty-four thousand, one hundred six</td>
<td>60,000 + 4,000 + 100 + 6</td>
</tr>
<tr>
<td>604,016</td>
<td>six hundred four thousand, sixteen</td>
<td>600,000 + 4,000 + 10 + 6</td>
</tr>
<tr>
<td>960,060</td>
<td>nine hundred sixty thousand, sixty</td>
<td>900,000 + 60,000 + 60</td>
</tr>
</tbody>
</table>

4. Black Rhinos are endangered, with only 4,400 left in the world. Timothy read that number as “four thousand, four hundred.” His father read the number as “44 hundred.” Who read the number correctly? Use pictures, numbers, or words to explain your answer.

<table>
<thead>
<tr>
<th>Thousands</th>
<th>hundred</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>44</td>
</tr>
</tbody>
</table>

44 hundred = 4,400

Timothy and his father are both correct.
1. Label the units in the place value chart. Draw place value disks to represent each number in the place value chart. Use <, >, or = to compare the two numbers. Write the correct symbol in the circle.

a. \[ \begin{array}{cccccc}
\text{millions} & \text{hundred thousands} & \text{ten thousands} & \text{thousands} & \text{hundreds} & \text{tens} \\
\hline
\cdot & \cdot & \cdot & \cdot & \cdot & \cdot \\
\cdot & \cdot & \cdot & \cdot & \cdot & \cdot \\
\cdot & \cdot & \cdot & \cdot & \cdot & \cdot \\
\end{array} \]

\[
600,015 \quad \text{○} \quad 60,105
\]

2. Compare the two numbers by using the symbols <, >, and =. Write the correct symbol in the circle.

a. \[ \begin{array}{cccccc}
\text{millions} & \text{hundred thousands} & \text{ten thousands} & \text{thousands} & \text{hundreds} & \text{tens} \\
\hline
\cdot & \cdot & \cdot & \cdot & \cdot & \cdot \\
\cdot & \cdot & \cdot & \cdot & \cdot & \cdot \\
\cdot & \cdot & \cdot & \cdot & \cdot & \cdot \\
\end{array} \]

\[
342,001 \quad \text{○} \quad 94,981
\]

b. \[
500,000 + 80,000 + 9,000 + 100 \quad \text{○} \quad \text{five hundred eight thousand, nine hundred one}
\]

\[
589,100 \quad 508,901
\]

c. \[
9 \text{ hundred thousands} \quad 8 \text{ thousands} \quad 9 \text{ hundreds} \quad 3 \text{ tens} \quad \text{○} \quad 908,930
\]

\[
908,930 \quad 908,930
\]

d. \[
9 \text{ hundreds} \quad 5 \text{ ten thousands} \quad 9 \text{ ones} \quad \text{○} \quad 6 \text{ ten thousands} \quad 5 \text{ hundreds} \quad 9 \text{ ones}
\]

\[
50909 \quad 60509
\]
3. Use the information in the chart below to list the height in feet of each mountain from least to greatest. Then name the mountain that has the lowest elevation in feet.

<table>
<thead>
<tr>
<th>Name of Mountain</th>
<th>Elevation in Feet (ft.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Allen Mountain</td>
<td>4,347 ft.</td>
</tr>
<tr>
<td>Mount Marcy</td>
<td>5,343 ft.</td>
</tr>
<tr>
<td>Mount Haystack</td>
<td>4,960 ft.</td>
</tr>
<tr>
<td>Slide Mountain</td>
<td>4,180 ft.</td>
</tr>
</tbody>
</table>

Slide Mountain has the lowest elevation in feet at 4,180 ft.

4. Arrange these numbers from least to greatest: 8,002 2,080 820 2,008 8,200

820; 2,008; 2,080; 8,002; 8,200

5. Arrange these numbers from greatest to least: 728,000 708,200 720,800 87,300

728,000 720,800 708,200 87,300

6. One astronomical unit, or 1 AU, is the approximate distance from Earth to the sun. The following are the approximate distances from Earth to nearby stars given in AUs:

- Alpha Centauri is 275,725 AUs from Earth.
- Proxima Centauri is 268,269 AUs from Earth.
- Epsilon Eridani is 665,282 AUs from Earth.
- Barnard's Star is 377,098 AUs from Earth.
- Sirius is 542,774 AUs from Earth.

List the names of the stars and their distances in AUs in order from closest to farthest from Earth.

- Proxima Centauri - 268,269 AUs
- Alpha Centauri - 275,725 AUs
- Barnard's Star - 377,098 AUs
- Sirius - 542,774 AUs
- Epsilon Eridani - 665,282 AUs
## A

Multiply.

<table>
<thead>
<tr>
<th></th>
<th>1 x 4 =</th>
<th>4</th>
<th>23</th>
<th>10 x 4 =</th>
<th>40</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>4 x 1 =</td>
<td>4</td>
<td>24</td>
<td>9 x 4 =</td>
<td>36</td>
</tr>
<tr>
<td>3</td>
<td>2 x 4 =</td>
<td>8</td>
<td>25</td>
<td>4 x 4 =</td>
<td>16</td>
</tr>
<tr>
<td>4</td>
<td>4 x 2 =</td>
<td>8</td>
<td>26</td>
<td>8 x 4 =</td>
<td>32</td>
</tr>
<tr>
<td>5</td>
<td>3 x 4 =</td>
<td>12</td>
<td>27</td>
<td>4 x 3 =</td>
<td>12</td>
</tr>
<tr>
<td>6</td>
<td>4 x 3 =</td>
<td>12</td>
<td>28</td>
<td>7 x 4 =</td>
<td>28</td>
</tr>
<tr>
<td>7</td>
<td>4 x 4 =</td>
<td>16</td>
<td>29</td>
<td>6 x 4 =</td>
<td>24</td>
</tr>
<tr>
<td>8</td>
<td>5 x 4 =</td>
<td>20</td>
<td>30</td>
<td>4 x 10 =</td>
<td>40</td>
</tr>
<tr>
<td>9</td>
<td>4 x 5 =</td>
<td>20</td>
<td>31</td>
<td>4 x 5 =</td>
<td>30</td>
</tr>
<tr>
<td>10</td>
<td>6 x 4 =</td>
<td>24</td>
<td>32</td>
<td>4 x 6 =</td>
<td>24</td>
</tr>
<tr>
<td>11</td>
<td>4 x 6 =</td>
<td>24</td>
<td>33</td>
<td>4 x 1 =</td>
<td>4</td>
</tr>
<tr>
<td>12</td>
<td>7 x 4 =</td>
<td>28</td>
<td>34</td>
<td>4 x 9 =</td>
<td>36</td>
</tr>
<tr>
<td>13</td>
<td>4 x 7 =</td>
<td>28</td>
<td>35</td>
<td>4 x 4 =</td>
<td>16</td>
</tr>
<tr>
<td>14</td>
<td>8 x 4 =</td>
<td>32</td>
<td>36</td>
<td>4 x 3 =</td>
<td>12</td>
</tr>
<tr>
<td>15</td>
<td>4 x 8 =</td>
<td>32</td>
<td>37</td>
<td>4 x 2 =</td>
<td>8</td>
</tr>
<tr>
<td>16</td>
<td>9 x 4 =</td>
<td>36</td>
<td>38</td>
<td>4 x 7 =</td>
<td>28</td>
</tr>
<tr>
<td>17</td>
<td>4 x 9 =</td>
<td>36</td>
<td>39</td>
<td>4 x 8 =</td>
<td>32</td>
</tr>
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<td>18</td>
<td>10 x 4 =</td>
<td>40</td>
<td>40</td>
<td>11 x 4 =</td>
<td>44</td>
</tr>
<tr>
<td>19</td>
<td>4 x 10 =</td>
<td>40</td>
<td>41</td>
<td>4 x 11 =</td>
<td>44</td>
</tr>
<tr>
<td>20</td>
<td>4 x 3 =</td>
<td>12</td>
<td>42</td>
<td>12 x 4 =</td>
<td>48</td>
</tr>
<tr>
<td>21</td>
<td>1 x 4 =</td>
<td>4</td>
<td>43</td>
<td>4 x 12 =</td>
<td>48</td>
</tr>
<tr>
<td>22</td>
<td>2 x 4 =</td>
<td>8</td>
<td>44</td>
<td>13 x 4 =</td>
<td>52</td>
</tr>
</tbody>
</table>
B

<table>
<thead>
<tr>
<th></th>
<th>Multiply</th>
<th>Improvement</th>
<th># Correct</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>4 x 1 =</td>
<td>4</td>
<td>23</td>
</tr>
<tr>
<td>2</td>
<td>1 x 4 =</td>
<td>4</td>
<td>24</td>
</tr>
<tr>
<td>3</td>
<td>4 x 2 =</td>
<td>8</td>
<td>25</td>
</tr>
<tr>
<td>4</td>
<td>2 x 4 =</td>
<td>8</td>
<td>26</td>
</tr>
<tr>
<td>5</td>
<td>4 x 3 =</td>
<td>12</td>
<td>27</td>
</tr>
<tr>
<td>6</td>
<td>3 x 4 =</td>
<td>12</td>
<td>28</td>
</tr>
<tr>
<td>7</td>
<td>4 x 4 =</td>
<td>16</td>
<td>29</td>
</tr>
<tr>
<td>8</td>
<td>4 x 5 =</td>
<td>20</td>
<td>30</td>
</tr>
<tr>
<td>9</td>
<td>5 x 4 =</td>
<td>20</td>
<td>31</td>
</tr>
<tr>
<td>10</td>
<td>4 x 6 =</td>
<td>24</td>
<td>32</td>
</tr>
<tr>
<td>11</td>
<td>6 x 4 =</td>
<td>24</td>
<td>33</td>
</tr>
<tr>
<td>12</td>
<td>4 x 7 =</td>
<td>28</td>
<td>34</td>
</tr>
<tr>
<td>13</td>
<td>7 x 4 =</td>
<td>28</td>
<td>35</td>
</tr>
<tr>
<td>14</td>
<td>4 x 8 =</td>
<td>32</td>
<td>36</td>
</tr>
<tr>
<td>15</td>
<td>8 x 4 =</td>
<td>32</td>
<td>37</td>
</tr>
<tr>
<td>16</td>
<td>4 x 9 =</td>
<td>36</td>
<td>38</td>
</tr>
<tr>
<td>17</td>
<td>9 x 4 =</td>
<td>36</td>
<td>39</td>
</tr>
<tr>
<td>18</td>
<td>4 x 10 =</td>
<td>40</td>
<td>40</td>
</tr>
<tr>
<td>19</td>
<td>10 x 4 =</td>
<td>40</td>
<td>41</td>
</tr>
<tr>
<td>20</td>
<td>1 x 4 =</td>
<td>4</td>
<td>42</td>
</tr>
<tr>
<td>21</td>
<td>10 x 4 =</td>
<td>40</td>
<td>43</td>
</tr>
<tr>
<td>22</td>
<td>2 x 4 =</td>
<td>8</td>
<td>44</td>
</tr>
</tbody>
</table>
1. Label the place value chart. Use place value disks to find the sum or difference. Write the answer in standard form on the line.

   a. 10,000 more than six hundred five thousand, four hundred seventy-two is \(615,472\).

   \[
   \begin{array}{cccccccc}
   \text{millions} & \text{hundred thousands} & \text{ten thousands} & \text{thousands} & \text{hundreds} & \text{tens} & \text{ones} \\
   \hline
   0 & 6 & 1 & 5 & 4 & 7 & 2 \\
   \end{array}
   \]

   b. 100 thousand less than 400,000 + 80,000 + 1,000 + 30 + 6 is \(381,036\).

   \[
   \begin{array}{cccccccc}
   \text{millions} & \text{hundred thousands} & \text{ten thousands} & \text{thousands} & \text{hundreds} & \text{tens} & \text{ones} \\
   \hline
   3 & 8 & 1 & 0 & 3 & 6 \\
   \end{array}
   \]

   c. 230,070 is \(100,000\) more than 130,070.

   \[
   \begin{array}{cccccccc}
   \text{millions} & \text{hundred thousands} & \text{ten thousands} & \text{thousands} & \text{hundreds} & \text{tens} & \text{ones} \\
   \hline
   2 & 3 & 0 & 0 & 7 & 0 & 0 \\
   \end{array}
   \]

2. Lucy plays an online math game. She scored 100,000 more points on Level 2 than on Level 3. If she scored 349,867 points on Level 2, what was her score on Level 3? Use pictures, words, or numbers to explain your thinking.

   Lucy's level 3 score was 249,867 points.
3. Fill in the blank for each equation.

a. 10,000 + 40,060 = \underline{50,060} 

b. 21,195 − 10,000 = \underline{11,195} 

c. 999,000 + 1,000 = \underline{1,000,000} 

d. 129,231 − 100,000 = \underline{29,231} 

e. 122,000 = 22,000 + \underline{100,000} 

f. 38,018 = 39,018 − \underline{1,000}

4. Fill in the empty boxes to complete the patterns.

<table>
<thead>
<tr>
<th>a.</th>
<th>150,010</th>
<th>160,010</th>
<th>170,010</th>
<th>180,010</th>
<th>190,010</th>
<th>200,010</th>
</tr>
</thead>
</table>

Explain in pictures, numbers, or words how you found your answers.

- The numbers increase by 10,000 each time.

<table>
<thead>
<tr>
<th>b.</th>
<th>498,756</th>
<th>598,756</th>
<th>698,756</th>
<th>798,756</th>
<th>898,756</th>
<th>\underline{498,756}</th>
</tr>
</thead>
</table>

Explain in pictures, numbers, or words how you found your answers.

- The numbers decrease by 100,000 each time.

<table>
<thead>
<tr>
<th>c.</th>
<th>744,369</th>
<th>743,369</th>
<th>742,369</th>
<th>741,369</th>
<th>740,369</th>
<th>739,369</th>
</tr>
</thead>
</table>

Explain in pictures, numbers, or words how you found your answers.

- The numbers decrease by 1,000 each time.

<table>
<thead>
<tr>
<th>d.</th>
<th>128,910</th>
<th>118,910</th>
<th>108,910</th>
<th>98,910</th>
<th>88,910</th>
<th>78,910</th>
</tr>
</thead>
</table>

Explain in pictures, numbers, or words how you found your answers.

- The numbers decrease by 10,000 each time.
1. Round to the nearest thousand. Use the number line to model your thinking.

   a. $6,700 = \underline{7,000}$

   - $7,000$
   - $6,700$
   - $6,500$
   - $6,000$

   b. $9,340 = \underline{9,000}$

   - $10,000$
   - $9,500$
   - $9,340$
   - $9,000$

   c. $16,401 = \underline{16,000}$

   - $17,000$
   - $16,500$
   - $16,401$
   - $16,000$

   d. $39,545 = \underline{40,000}$

   - $40,000$
   - $39,545$
   - $39,500$
   - $39,000$

   e. $399,499 = \underline{399,000}$

   - $400,000$
   - $399,500$
   - $399,499$
   - $399,000$

   f. $840,007 = \underline{840,000}$

   - $841,000$
   - $841,500$
   - $840,007$
   - $840,000$
2. A pilot wanted to know about how many kilometers he flew on his last 3 flights. From NYC to London, he flew 5,572 km. Then, from London to Beijing, he flew 8,147 km. Finally, he flew 10,996 km from Beijing back to NYC. Round each number to the nearest thousand, and then find the sum of the rounded numbers to estimate about how many kilometers the pilot flew.

\[ 5,572 \approx 6,000 \]
\[ 8,147 \approx 8,000 \]
\[ 10,996 \approx 11,000 \]
\[ \begin{array}{c}
5,000 \\
6,000 \\
8,000 \\
+ 10,000 \\
\hline
25,000 \\
\end{array} \]

The pilot flew about 25,000 km.

3. Mrs. Smith’s class is learning about healthy eating habits. The students learned that the average child should consume about 12,000 calories each week. Kerry consumed 12,748 calories last week. Tyler consumed 11,702 calories last week. Round to the nearest thousand to find who consumed closer to the recommended number of calories. Use pictures, numbers, or words to explain.

Kerry

\[ 12,000 \]
\[ 12,500 \]
\[ 12,000 \]

Tyler

\[ 12,000 \]
\[ 11,500 \]
\[ 11,000 \]

Tyler ate closer to the recommended number of calories. When rounding to the nearest thousand, Kerry ate closer to 12,000 calories while Tyler ate closer to 12,000 calories.

4. For the 2013-2014 school year, the cost of tuition at Cornell University was $43,000 when rounded to the nearest thousand. What is the greatest possible amount the tuition could be? What is the least possible amount the tuition could be?

\[ 44,000 \]
\[ 43,500 \]
\[ 43,100 \]
\[ 43,000 \]
\[ 43,000 \]
\[ 42,500 \]
\[ 42,500 \]

The least amount the tuition could be is $42,500. The greatest possible amount the tuition could be is $43,499.
Complete each statement by rounding the number to the given place value. Use the number line to show your work.

1. a. 53,000 rounded to the nearest ten thousand is 50,000.
   
   b. 42,708 rounded to the nearest ten thousand is 40,000.

2. a. 240,000 rounded to the nearest hundred thousand is 200,000.
   
   b. 449,019 rounded to the nearest hundred thousand is 400,000.

   c. 406,823 rounded to the nearest ten thousand is 410,000.

   c. 964,103 rounded to the nearest hundred thousand is 1,000,000.
3. 975,462 songs were downloaded in one day. Round this number to the nearest hundred thousand to estimate how many songs were downloaded in one day. Use a number line to show your work.

\[
\begin{array}{c}
\uparrow 1,000,000 \\
\downarrow 975,462 \\
\downarrow 950,000 \\
\downarrow 900,000 \\
\end{array}
\]

In one day there were about 1,000,000 songs downloaded.

4. This number was rounded to the nearest ten thousand. List the possible digits that could go in the thousands place to make this statement correct. Use a number line to show your work.

\[
\begin{array}{c}
13_\_644 = 130,000 \\
\uparrow 140,000 \\
\downarrow 135,000 \\
\downarrow 134,000 \\
\downarrow 133,000 \\
\downarrow 132,000 \\
\downarrow 131,000 \\
\downarrow 130,000 \\
\end{array}
\]

The possible digits that could go in the thousands place are 0, 1, 2, 3, or 4. to make this statement correct.

5. Estimate the difference by rounding each number to the given place value.

\[
712,350 - 342,802
\]

a. Round to the nearest ten thousands.

\[
\begin{array}{c}
712,350 - 342,802 \approx 710,000 - 340,000 \\
410,000 \\
- 340,000 \\
\hline
370,000
\end{array}
\]

b. Round to the nearest hundred thousands.

\[
\begin{array}{c}
712,350 - 342,802 \approx 700,000 - 300,000 \\
700 \text{ thousand} \\
- 300 \text{ thousand} \\
\hline
400 \text{ thousand}
\end{array}
\]
### A

Find the midpoint. # Correct _____

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|   | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | 42 | 43 | 44 |
|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
|   | 6000| 6500| 7000|
|   | 600 | 650 | 700 |
|   | 600 | 650 | 700 |
|   | 60  | 65  | 70  |
|   | 260 | 265 | 270 |
|   | 9260| 9265| 9270|
|   | 80  | 85  | 90  |
|   | 90  | 95  | 100 |
|   | 990 | 995 | 1000|
|   | 9990| 9995| 10,000|
|   | 440 | 445 | 450 |
|   | 8300| 8350| 8400|
|   | 680 | 685 | 690 |
|   | 9400| 9450| 9500|
|   | 3900| 3950| 4000|
|   | 2450| 2455| 2460|
|   | 7080| 7085| 7090|
|   | 3200| 3205| 3210|
|   | 8630| 8635| 8640|
|   | 8190| 8195| 8200|
|   | 2510| 2515| 2520|
|   | 4890| 4895| 4900|
|   | 6660| 6665| 6670|
B  
Find the midpoint.  

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</table>
1. Round to the nearest thousand.
   
   a. \( 5,300 \approx 5,000 \)  
   b. \( 4,589 \approx 5,000 \)  
   
   c. \( 42,099 \approx 42,000 \)  
   d. \( 801,504 \approx 802,000 \)  
   
   e. Explain how you found your answer for Part (d).
   
   \( 801,504 \) is between \( 801 \) thousand and \( 802 \) thousand. The halfway point is \( 801,500 \). \( 801,504 \) is greater than the halfway point so it would round up to \( 802,000 \).  

2. Round to the nearest ten thousand.
   
   a. \( 26,000 \approx 30,000 \)  
   b. \( 34,920 \approx 30,000 \)  
   
   c. \( 789,091 \approx 790,000 \)  
   d. \( 706,286 \approx 710,000 \)  
   
   e. Explain why two problems have the same answer. Write another number that has the same answer when rounded to the nearest ten thousand.
   
   \( 26,000 \) is closer to \( 30,000 \) than \( 20,000 \) so it rounds up to \( 30,000 \). \( 34,920 \) is closer to \( 30,000 \) than \( 40,000 \) so it rounds down to \( 30,000 \). That is why they have the same answer. Answer will vary for another number with the same answer.

3. Round to the nearest hundred thousand.
   
   a. \( 840,000 \approx 800,000 \)  
   b. \( 850,471 \approx 900,000 \)  
   
   c. \( 761,004 \approx 800,000 \)  
   d. \( 991,965 \approx 1,000,000 \)  
   
   e. Explain why two problems have the same answer. Write another number that has the same answer when rounded to the nearest hundred thousand.
   
   Answers will vary.
4. Solve the following problems using pictures, numbers, or words.

a. The 2012 Super Bowl had an attendance of just 68,658 people. If the headline in the newspaper the next day read “About 70,000 People Attend Super Bowl,” how did the newspaper round to estimate the total number of people in attendance?

\[
\begin{align*}
68,658 & \approx 70,000 \\
68,000 & \approx 70,000 \\
65,000 & \approx 65,000 \\
60,000 & \approx 60,000
\end{align*}
\]

The newspaper rounded to the nearest ten thousand to estimate the total number of people in attendance.

b. The 2011 Super Bowl had an attendance of 103,219 people. If the headline in the newspaper the next day read “About 200,000 People Attend Super Bowl,” is the newspaper’s estimate reasonable? Use rounding to explain your answer.

\[
\begin{align*}
200,000 & \approx 200,000 \\
150,000 & \approx 150,000 \\
103,219 & \approx 100,000 \\
100,000 & \approx 100,000
\end{align*}
\]

The newspaper’s estimate is not reasonable. 103,219 rounded to the nearest hundred thousand would be 100,000.

c. According to the problems above, about how many more people attended the Super Bowl in 2011 than in 2012? Round each number to the largest place value before giving the estimated answer.

\[
\begin{align*}
68,658 & \approx 70,000 \\
103,219 & \approx 100,000
\end{align*}
\]

\[
100,000 - 70,000 = 30,000
\]

About 30,000 more people attended the 2011 Super Bowl than the 2012 Super Bowl.
1. Round 543,982 to the nearest using another method
   a. thousand: 544,000 (543,982)
   b. ten thousand: 540,000 (543,982)
   c. hundred thousand: 500,000 (543,982)

2. Complete each statement by rounding the number to the given place value.
   a. 2,841 rounded to the nearest hundred is 2,800 (2,841)
   b. 32,851 rounded to the nearest hundred is 32,900 (32,851)
   c. 132,891 rounded to the nearest hundred is 133,900 (132,891)
   d. 6,299 rounded to the nearest thousand is 6,000 (6,299)
   e. 36,599 rounded to the nearest thousand is 37,000 (36,599)
   f. 100,699 rounded to the nearest thousand is 101,000 (100,699)
   g. 40,984 rounded to the nearest ten thousand is 40,000 (40,984)
   h. 54,984 rounded to the nearest ten thousand is 50,000 (54,984)
   i. 997,010 rounded to the nearest ten thousand is 1,000,000 (997,010)
   j. 360,034 rounded to the nearest hundred thousand is 400,000 (360,034)
   k. 436,709 rounded to the nearest hundred thousand is 400,000 (436,709)
   l. 852,442 rounded to the nearest hundred thousand is 900,000 (852,442)
3. Empire Elementary School needs to purchase water bottles for field day. There are 2,142 students. Principal Vadar rounded to the nearest hundred to estimate how many water bottles to order. Will there be enough water bottles for everyone? Explain.

There would not be enough water bottles if Principal Vadar rounded 2,142 to the nearest hundred. 2,142 would round to 2,100. The school would not have enough water bottles for every student.

2,142 ≈ 2,100

4. Opening day at the New York State Fair in 2012 had an attendance of 46,753. Decide which place value to round 46,753 to if you were writing a newspaper article. Round the number and explain why it is an appropriate unit to round the attendance to.

I would round 46,753 to the nearest ten-thousands place to get 50,000. It is pretty close to the actual number and gives the reader an idea of approximately how many people were in attendance.

5. A jet airplane holds about 65,000 gallons of gas. It uses about 7,460 gallons when flying between New York City and Los Angeles. Round each number to the largest place value. Then find about how many trips the plane can take between cities before running out of fuel.

The plane can make about 10 trips between the 2 cities because 7,100 x 10 = 71,000.
A

Round to the nearest ten thousand.

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### Round to the nearest ten thousand.

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1. Solve the addition problems below using the standard algorithm.

   a. \[ \begin{array}{c}
   6,311 \\
   + 2,688 \\
   \hline
   9,099
   \end{array} \]

   b. \[ \begin{array}{c}
   6,311 \\
   + 1,268 \\
   \hline
   7,579
   \end{array} \]

   c. \[ \begin{array}{c}
   6,314 \\
   + 1,268 \\
   \hline
   7,582
   \end{array} \]

   d. \[ \begin{array}{c}
   6,314 \\
   + 2,493 \\
   \hline
   8,807
   \end{array} \]

   e. \[ \begin{array}{c}
   8,314 \\
   + 2,493 \\
   \hline
   10,807
   \end{array} \]

   f. \[ \begin{array}{c}
   12,378 \\
   + 5,463 \\
   \hline
   17,841
   \end{array} \]

   g. \[ \begin{array}{c}
   5,2098 \\
   + 6,048 \\
   \hline
   11,256
   \end{array} \]

   h. \[ \begin{array}{c}
   3,4698 \\
   + 7,1840 \\
   \hline
   10,6538
   \end{array} \]

   i. \[ \begin{array}{c}
   5,4411 \\
   + 356,445 \\
   \hline
   356,856
   \end{array} \]

   j. \[ \begin{array}{c}
   527 + 275 + 752 \\
   \hline
   1,554
   \end{array} \]

   k. \[ \begin{array}{c}
   38,193 + 6,376 + 241,457 \\
   \hline
   286,026
   \end{array} \]
Draw a tape diagram to represent each problem. Use numbers to solve, and write your answer as a statement.

2. In September, Liberty Elementary School collected 32,537 cans for a fundraiser. In October, they collected 207,492 cans. How many cans were collected during September and October?

\[
\begin{align*}
32,537 & \quad 207,492 \\
+ & \quad \phantom{\text{else}} \\
\phantom{\text{else}} & \quad \phantom{\text{else}} \\
\hline
240,029 & \\
\end{align*}
\]

During September and October \(240,029\) cans were collected.

3. A baseball stadium sold some burgers. 2,806 were cheeseburgers. 1,679 burgers didn’t have cheese. How many burgers did they sell in all?

\[
\begin{align*}
2,806 & \quad 1,679 \\
+ & \phantom{\text{else}} \\
\phantom{\text{else}} & \phantom{\text{else}} \\
\hline
4,485 & \\
\end{align*}
\]

There were \(4,485\) burgers sold altogether.

4. On Saturday night, 23,748 people attended the concert. On Sunday, 7,570 more people attended the concert than on Saturday. How many people attended the concert on Sunday?

\[
\begin{align*}
23,748 & \\
+ & \phantom{\text{else}} \\
\phantom{\text{else}} & \phantom{\text{else}} \\
\hline
31,318 & \\
\end{align*}
\]

On Sunday \(31,318\) people attended the concert.
Estimate and then solve each problem. Model the problem with a tape diagram. Explain if your answer is reasonable.

1. For the bake sale, Connie baked 144 cookies. Esther baked 49 more cookies than Connie.

   a. About how many cookies did Connie and Esther bake? Estimate by rounding each number to the nearest ten before adding.

   \[
   \begin{align*}
   \text{Connie} &\approx 140 \text{ cookies} \\
   \text{Esther} &\approx 140 + 50 = 190 \text{ cookies} \\
   \hline
   140 & + 190 \\
   \hline
   330
   \end{align*}
   \]

   Connie and Esther baked about 330 cookies together.

   b. Exactly how many cookies did Connie and Esther bake?

   \[
   \begin{align*}
   C & = 144 \\
   E & = 144 + 49 = 193 \\
   \hline
   C & + E \\
   \hline
   144 & + 193 \\
   \hline
   \underline{337}
   \end{align*}
   \]

   Connie and Esther baked 337 cookies together.

   c. Is your answer reasonable? Compare your estimate from (a) to your answer from (b). Write a sentence to explain your reasoning.

   My answer (337 cookies) is reasonable because my estimate from (a) is 330 cookies. 337 is very close to 330.
2. Raffle tickets were sold for a school fundraiser to parents, teachers, and students. 563 tickets were sold to teachers. 888 more tickets were sold to students than to teachers. 904 tickets were sold to parents.

   a. About how many tickets were sold to parents, teachers, and students? Round each number to the nearest hundred to find your estimate.

   \[
   \begin{align*}
   T & \quad 563 \quad \approx \quad 600 \\
   S & \quad 888 \quad \approx \quad 900 \\
   P & \quad 904 \quad \approx \quad 900
   \end{align*}
   \]

   b. Exactly how many tickets were sold to parents, teachers, and students?

   \[
   \begin{align*}
   T & \quad 563 \\
   S & \quad 888 \quad = \quad 1,451 \\
   P & \quad 904 \quad = \quad 2,918
   \end{align*}
   \]

   c. Assess the reasonableness of your answer in (b). Use your estimate from (a) to explain.

   The number of tickets (2,918) is reasonable because it is real close to the estimate of 3,000.

3. From 2010 to 2011, the population of Queens increased by 16,075. Brooklyn’s population increased by 11,870 more than the population increase of Queens.

   a. Estimate the total combined population increase of Queens and Brooklyn from 2010 to 2011. (Round the addends to estimate.)

   \[
   \begin{align*}
   Q & \quad 16,075 \quad \approx \quad 16,000 \\
   B & \quad 11,870 \quad \approx \quad 12,000 + 18,000 \approx 28,000
   \end{align*}
   \]

   \[
   \begin{align*}
   \text{Total} & \quad 16,000 + 16,000 \\
   & \quad = \quad 44,000
   \end{align*}
   \]

   The estimated combined population increase in Queens and Brooklyn between 2010 and 2011 is about 44,000.
1. Use the standard algorithm to solve the following subtraction problems.

   a. \[ \begin{array}{c} 7,525 \\ -3,502 \\ \hline 4,023 \end{array} \]

   b. \[ \begin{array}{c} 17,525 \\ -13,502 \\ \hline 4,023 \end{array} \]

   c. \[ \begin{array}{c} 6,615 \\ -4,417 \\ \hline 2,198 \end{array} \]

   d. \[ \begin{array}{c} 5,12 \end{array} \\ -4,35 \hline 4,190 \]

   e. \[ \begin{array}{c} 410 \end{array} \\ -470 \hline 630 \]

   f. \[ \begin{array}{c} 5,825 \end{array} \\ -3,502 \hline 2,523 \]

   g. \[ \begin{array}{c} 12,640 \\ -14,630 \hline 9,010 \end{array} \]

   h. \[ \begin{array}{c} 2,925 \\ -2,048 \hline 877,110 \end{array} \]

   i. \[ \begin{array}{c} 1,792 \end{array} \\ -1,217 \hline 984 \]

Draw a tape diagram to represent each problem. Use numbers to solve, and write your answer as a statement. Check your answers.

2. What number must be added to 13,875 to result in a sum of 25,884?

\[ \begin{array}{c} 13,875 \end{array} \quad ? \quad \begin{array}{c} 25,884 \end{array} \]

\[ 25,884 - 13,875 = 12,009 \]

\[ \text{Chk: } 12,009 + 13,875 = 25,884 \]

For the sum of 25,884 you must add 12,009 to 13,875.
3. Artist Michelangelo was born on March 6, 1475. Author Mem Fox was born on March 6, 1946. How many years after Michelangelo was born was Mem born?

\[
\begin{align*}
1475 & \quad \boxed{?} \\
-1475 & \quad 1946 \\
\hline
0 & \quad 471
\end{align*}
\]

\[\text{Chk: } 1475 + 471 = 1946\]

Mem Fox was born \(\boxed{471}\) years after Michelangelo.

4. During the month of March, 68,025 pounds of king crab were caught. If 15,614 pounds were caught in the first week of March, how many pounds were caught in the rest of the month?

\[
\begin{align*}
15,614 & \quad \boxed{?} \\
-15,614 & \quad 68,025 \\
\hline
0 & \quad 52,411
\end{align*}
\]

\[\text{Chk: } 52,411 + 15,614 = 68,025\]

There were \(\boxed{52,411}\) pounds of crab caught during the rest of March.

5. James bought a used car. After driving exactly 9,050 miles, the odometer read 118,064 miles. What was the odometer reading when James bought the car?

\[
\begin{align*}
\boxed{?} & \quad 9,050 \\
-9,050 & \quad 118,064 \\
\hline
0 & \quad 109,014
\end{align*}
\]

\[\text{Chk: } 109,014 + 9,050 = 118,064\]

The odometer reading was \(\boxed{109,014}\) miles when James bought this car.
1. Use the standard algorithm to solve the following subtraction problems.

   a. \[
   \begin{array}{c}
   3,400 \\
   \hline
   -1,370 \\
   \hline
   1,030
   \end{array}
   \]

   b. \[
   \begin{array}{c}
   12,400 \\
   \hline
   -1,470 \\
   \hline
   990
   \end{array}
   \]

   c. \[
   \begin{array}{c}
   8,900 \\
   \hline
   -4,784 \\
   \hline
   4,116
   \end{array}
   \]

   d. \[
   \begin{array}{c}
   7,370 \\
   \hline
   -1,472 \\
   \hline
   5,898
   \end{array}
   \]

   e. \[
   \begin{array}{c}
   13,210 \\
   \hline
   -3,117 \\
   \hline
   93,189
   \end{array}
   \]

   f. \[
   \begin{array}{c}
   9,780 \\
   \hline
   -4,705 \\
   \hline
   4,975
   \end{array}
   \]

   g. \[
   \begin{array}{c}
   2,930 \\
   \hline
   -121,117 \\
   \hline
   2,889
   \end{array}
   \]

   h. \[
   \begin{array}{c}
   8,477 \\
   \hline
   -47,705 \\
   \hline
   49,979
   \end{array}
   \]

   i. \[
   \begin{array}{c}
   3,510 \\
   \hline
   -31,117 \\
   \hline
   99,943
   \end{array}
   \]

   Draw a tape diagram to represent each problem. Use numbers to solve, and write your answer as a statement. Check your answers.

2. There are 86,400 seconds in one day. If Mr. Liegel is at work for 28,800 seconds a day, how many seconds away from work?

   \[
   \begin{array}{c}
   \text{work} \\
   \hline
   86,400
   \end{array} \quad \begin{array}{c}
   \text{away} \\
   \hline
   28,800
   \end{array} \quad \begin{array}{c}
   \text{?} \\
   \hline
   57,600
   \end{array}
   \]

   Mr. Liegel is away from work \( \frac{57,600}{86,400} \) seconds a day.
3. A newspaper company delivered 240,900 newspapers before 6 a.m. on Sunday. There were a total of 525,600 newspapers to deliver. How many more newspapers needed to be delivered on Sunday?

\[
\begin{align*}
\text{before burn} & \quad \text{to be delivered} \\
\cline{1-2}
\text{Sunday} & \quad \frac{424,116}{525,600} \\
\cline{1-2}
\text{needed} & \quad \frac{284,700}{525,600} \\
\end{align*}
\]

There are \( \frac{284,700}{525,600} \) newspapers that needed to be delivered.

4. A theater holds a total of 2,013 chairs. 197 chairs are in the VIP section. How many chairs are not in the VIP section?

\[
\begin{align*}
\text{VIP} & \quad \frac{197}{2,013} \\
\cline{1-1}
\text{2,013} & \quad \frac{1,816}{2,013} \\
\end{align*}
\]

There are \( \frac{1,816}{2,013} \) chairs not in the VIP section.

5. Chuck's mom spent $19,155 on a new car. She had $30,064 in her bank account. How much money does Chuck's mom have after buying the car?

\[
\begin{align*}
\text{car} & \quad \frac{19,155}{30,064} \\
\cline{1-1}
\text{30,064} & \quad \frac{10,909}{30,064} \\
\end{align*}
\]

Chuck's mom has \( \frac{10,909}{30,064} \) after buying the car.
1. Use the standard subtraction algorithm to solve the problems below.

a. \[
\begin{array}{c}
8 \quad 9 \quad 1 \quad 5 \\
- \quad 9 \quad 1 \quad 6 \quad 8 \\
\hline
9,980
\end{array}
\]

b. \[
\begin{array}{c}
8 \quad 9 \quad 1 \quad 5 \\
- \quad 9 \quad 9 \quad 8 \\
\hline
91,680
\end{array}
\]

c. \[
\begin{array}{c}
1 \quad 3 \quad 4 \quad 5 \\
- \quad 4 \quad 4 \quad 7 \quad 0 \quad 2 \\
\hline
197,859
\end{array}
\]

d. \[
\begin{array}{c}
1 \quad 3 \quad 4 \quad 5 \\
- \quad 7 \quad 4 \quad 9 \quad 8 \quad 7 \\
\hline
167,574
\end{array}
\]

e. \[
\begin{array}{c}
8 \quad 9 \quad 9 \quad 10 \\
- \quad 5 \quad 9 \quad 2 \quad 0 \\
\hline
408,000
\end{array}
\]

f. \[
\begin{array}{c}
8 \quad 9 \quad 9 \quad 9 \\
- \quad 5 \quad 9 \quad 2 \quad 5 \quad 0 \quad 0 \\
\hline
407,500
\end{array}
\]

g. \[
\begin{array}{c}
5 \quad 9 \quad 1 \quad 5 \quad 4 \\
- \quad 5 \quad 9 \quad 2 \quad 5 \quad 6 \quad 9 \\
\hline
08 \quad 0 \quad 8 \quad 9
\end{array}
\]

h. \[
\begin{array}{c}
5 \quad 9 \quad 1 \quad 4 \quad 9 \quad 10 \\
- \quad 5 \quad 9 \quad 2 \quad 5 \quad 6 \quad 9 \\
\hline
7 \quad 4 \quad 3 \quad 1
\end{array}
\]
Use tape diagrams and the standard algorithm to solve the problems below. Check your answers.

2. David is flying from Hong Kong to Buenos Aires. The total flight distance is 11,472 miles. If the plane has 7,793 miles left to travel, how far has it already traveled?

\[
\begin{align*}
\text{Check:} & \\
11,472 & \quad 7,793 \\
- & \\
3,679 & \\
\end{align*}
\]

The plane has already traveled 3,679 miles.

3. Tank A holds 678,500 gallons of water. Tank B holds 905,867 gallons of water. How much less water does Tank A hold than Tank B?

\[
\begin{align*}
\text{Check:} & \\
905,867 & \quad 678,500 \\
- & \\
227,367 & \\
\end{align*}
\]

Tank A holds 227,367 less gallons of water than Tank B.

4. Mark had $25,081 in his bank account on Thursday. On Friday, he added his paycheck to the bank account, and he then had $26,010 in the account. What was the amount of Mark’s paycheck?

\[
\begin{align*}
\text{Check:} & \\
26,010 & \quad 25,081 \\
- & \\
929 & \\
\end{align*}
\]

Mark’s paycheck was for $929.
Name _____________________________ Date _______________

Estimate first, and then solve each problem. Model the problem with a tape diagram. Explain if your answer is reasonable.

1. On Monday, a farmer sold 25,196 pounds of potatoes. On Tuesday, he sold 18,023 pounds. On Wednesday, he sold some more potatoes. In all, he sold 62,409 pounds of potatoes.

   a. About how many pounds of potatoes did the farmer sell on Wednesday? Estimate by rounding each value to the nearest thousand, and then compute.

   \[
   \text{Total: } 62,409 \approx 62,000 \\
   \text{Mon.: } 25,196 \approx 25,000 \\
   \text{Tues.: } 18,023 \approx 18,000 \\
   \text{\underline{25,000}} \quad \text{\underline{18,000}} \quad ? \\
   \]

   \[
   \begin{align*}
   \text{62,000} & \quad \text{25,000} & \quad 62,000 \\
   +18,000 & \quad -43,000 & \quad ? \\
   \hline
   43,000 & \quad 19,000 & \quad ? \\
   \end{align*}
   \]

   The farm sold about 19,000 pounds of potatoes on Wed.

   b. Find the precise number of pounds of potatoes sold on Wednesday.

   \[
   \begin{array}{c}
   \text{62,409} \\
   \text{25,196} \\
   +18,023 \\
   \hline
   43,219 \\
   \text{19,190} \\
   \end{array}
   \]

   The farm sold 19,190 pounds of potatoes on Wed.

   c. Is your precise answer reasonable? Compare your estimate from (a) to your answer from (b). Write a sentence to explain your reasoning.

   Yes, my answer of 19,190 is reasonable. 19,190 rounded to the nearest thousand is 19,000—which was my estimate.
2. A gas station had two pumps. Pump A dispensed 241,752 gallons. Pump B dispensed 113,916 more gallons than Pump A.

a. About how many gallons did both pumps dispense? Estimate by rounding each value to the nearest hundred thousand and then compute. 

$$241,752 \approx 200,000$$  
$$113,916 \approx 100,000$$

Pump A: $\frac{200,000}{200,000} + \frac{100,000}{300,000} + \frac{200,000}{500,000}$

Pump B: $\frac{200,000}{100,000}$

b. Exactly how many gallons did both pumps dispense?

Pump A: $241,752 + 113,916$  
$355,668$  

Pump B: $\frac{355,668}{597,420}$

Both pumps dispensed about 500,000 gallons.

Both pumps dispensed 597,420 gallons.

c. Assess the reasonableness of your answer in (b). Use your estimate from (a) to explain.

My answer of 597,420 gallons is far from my estimate of 500,000. I know if I rounded to a smaller unit, my estimate would be nearer to the actual answer.

3. Martin’s car had 86,456 miles on it. Of that distance, Martin’s wife drove 24,901 miles, and his son drove 7,997 miles. Martin drove the rest.

a. About how many miles did Martin drive? Round each value to estimate.

$$86,456 \approx 86,000$$  
$$24,901 \approx 25,000$$  
$$7,997 \approx 8,000$$

Martin drove about 53,000 miles.

b. Exactly how many miles did Martin drive?

$$24,901 + 7,997 - 32,898$$  
$$53,558$$

Martin drove 53,558 miles.

c. Assess the reasonableness of your answer in (b). Use your estimate from (a) to explain.

My answer of 53,558 miles is reasonable because it is close to my estimate of 53,000.
4. A class read 3,452 pages the first week and 4,090 more pages in the second week than in the first week. How many pages had they read by the end of the second week? Is your answer reasonable? Explain how you know using estimation.

\[3,452 \approx 3,000\]
\[4,090 \approx 4,000\]
\[3,000 + 4,000 = 7,000\]
\[+ 3,000 + 4,000 = 10,000\]

\[\frac{3,452}{7,000} \frac{3,452}{10,000} \]

1st Week: \[3,452\]
2nd Week: \[3,452 + 4,090 = 7,542\]

\[\frac{7,542}{10,994}\]

* The class read about 10,000 pages by the end of the second week. ** My answer is reasonable because my estimate was 10,000 which is very close to 10,994.

5. A cargo plane weighed 500,000 pounds. After the first load was taken off, the airplane weighed 437,981 pounds. Then 16,478 more pounds were taken off. What was the total number of pounds of cargo removed from the plane? Is your answer reasonable? Explain.

\[437,981 \approx 440,000\]
\[580,000 - 440,000 = 140,000\]
\[16,478 \approx 16,000\]
\[60,000 + 16,000 = 76,000\]

\[\frac{4,999,999}{500,000} \frac{437,981}{62,019} + 16,478 = 78,497\]

78,497 pounds of cargo were removed from the plane. My answer is reasonable because it is very close to my estimate of 76,000.
### A

Write in centimeters.

<p>| | | | | | | |</p>
<table>
<thead>
<tr>
<th></th>
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<tbody>
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<td>1</td>
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<td>200 cm</td>
<td>23</td>
<td>1 m 2 cm =</td>
<td>102 cm</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>3 m =</td>
<td>300 cm</td>
<td>24</td>
<td>1 m 3 cm =</td>
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<td>4 m =</td>
<td>400 cm</td>
<td>25</td>
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<tr>
<td>4</td>
<td>9 m =</td>
<td>900 cm</td>
<td>26</td>
<td>1 m 7 cm =</td>
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<td>2 m 7 cm =</td>
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<td>7 m =</td>
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<td>4 m 9 cm =</td>
<td>409 cm</td>
<td></td>
</tr>
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<td>608 cm</td>
<td></td>
</tr>
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<td>1 m 30 cm =</td>
<td>130 cm</td>
<td>33</td>
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<td>162 cm</td>
<td>40</td>
<td>4 m 17 cm =</td>
<td>417 cm</td>
<td></td>
</tr>
<tr>
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<td>2 m 62 cm =</td>
<td>262 cm</td>
<td>41</td>
<td>6 m 4 cm =</td>
<td>604 cm</td>
<td></td>
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<tr>
<td>20</td>
<td>7 m 62 cm =</td>
<td>762 cm</td>
<td>42</td>
<td>10 m 4 cm =</td>
<td>1004 cm</td>
<td></td>
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<tr>
<td>21</td>
<td>5 m 27 cm =</td>
<td>527 cm</td>
<td>43</td>
<td>10 m 40 cm =</td>
<td>1040 cm</td>
<td></td>
</tr>
<tr>
<td>22</td>
<td>3 m 87 cm =</td>
<td>387 cm</td>
<td>44</td>
<td>11 m 84 cm =</td>
<td>1184 cm</td>
<td></td>
</tr>
</tbody>
</table>

---

**Lesson 16:** Solve two-step word problems using the standard subtraction algorithm fluently modeled with tape diagrams and assess the reasonableness of answers using rounding

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<td>1 m 3 cm = 103 cm</td>
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<td>4</td>
<td>7 m = 700 cm</td>
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<td>5 m = 500 cm</td>
<td>2 m 9 cm = 209 cm</td>
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<td>6</td>
<td>9 m = 900 cm</td>
<td>3 m 9 cm = 309 cm</td>
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<td>4 m = 400 cm</td>
<td>7 m 9 cm = 709 cm</td>
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<td>1 m 64 cm = 164 cm</td>
<td>4 m 60 cm = 460 cm</td>
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<tr>
<td>17</td>
<td>1 m 53 cm = 153 cm</td>
<td>7 m 25 cm = 725 cm</td>
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<tr>
<td>18</td>
<td>1 m 42 cm = 142 cm</td>
<td>4 m 13 cm = 413 cm</td>
</tr>
<tr>
<td>19</td>
<td>2 m 42 cm = 242 cm</td>
<td>6 m 2 cm = 602 cm</td>
</tr>
<tr>
<td>20</td>
<td>8 m 42 cm = 842 cm</td>
<td>10 m 3 cm = 1003 cm</td>
</tr>
<tr>
<td>21</td>
<td>5 m 29 cm = 529 cm</td>
<td>10 m 30 cm = 1030 cm</td>
</tr>
<tr>
<td>22</td>
<td>3 m 89 cm = 389 cm</td>
<td>11 m 48 cm = 1148 cm</td>
</tr>
</tbody>
</table>
Draw a tape diagram to represent each problem. Use numbers to solve, and write your answer as a statement.

1. Sean’s school raised $32,587. Leslie’s school raised $18,749. How much more money did Sean’s school raise?

   Sean’s school: 32,587
   Leslie’s school: 18,749
   \[ \frac{32,587 - 18,749}{2} = 13,838 \]
   Sean’s school raised $13,838 more than Leslie’s school.

2. At a parade, 97,853 people sat in bleachers and 388,547 people stood along the street. How many fewer people were in the bleachers than standing on the street?

   Street: 388,547
   Bleachers: 97,853
   \[ \frac{388,547 - 97,853}{2} = 290,694 \]
   There were 290,694 fewer people in the bleachers than on the street.

3. A pair of hippos weighed 5,201 kilogram together. The female weighed 2,038 kilogram. How much more did the male weigh than the female?

   F: 2,038
   M: 2,038
   \[ \frac{5,201 - 2,038}{2} = 3,163 \]
   The male hippo weighed 3,163 kg. more than the female hippo.

4. A copper wire was 240 meters long. After 60 meters was cut off, it was double the length of a steel wire. How much longer was the copper wire than the steel wire at first?

   Copper: 240
   \[ \frac{240 - 60}{2} = 90 \]
   Steel: 90
   \[ \frac{90}{2} = 45 \]
   The Copper Wire was 150 meters longer than the steel wire, at first.
1. In one year the factory used 11,650 meters of cotton, 4,950 fewer meters of silk than cotton, and 3,500 fewer meters of wool than silk. How many meters in all were used of the three fabrics?

\[
\begin{align*}
\text{Cotton:} & \quad 11,650 \\
\text{Silk:} & \quad 4,950 \\
\text{Wool:} & \quad 3,500 \\
\end{align*}
\]

\[
\begin{align*}
& \quad 0 + 11,650 - 4,950 - 3,500 + 6,700 \\
& = 21,550 \\
\end{align*}
\]

21,550 meters of fabric were used.

2. The shop sold 12,789 chocolate and 9,324 cookie dough cones. It sold 1,078 more peanut butter cones than cookie dough cones and 999 more vanilla cones than chocolate cones. What was the total number of ice cream cones sold?

\[
\begin{align*}
\text{Chocolate:} & \quad 12,789 \\
\text{C.Dough:} & \quad 9,324 \\
\text{PB:} & \quad 9,324 + 1,078 \\
\text{Vanilla:} & \quad 12,789 + 999 \\
\end{align*}
\]

\[
\begin{align*}
& \quad 12,789 + 1,078 + 999 + 9,324 + 13,788 \\
& = 22,113 \\
& \quad 24,190 \\
\end{align*}
\]

They sold 46,303 cones.

3. In the first week of June, a restaurant sold 10,345 omelets. In the second week, 1,096 fewer omelets were sold than in the first week. In the third week, 2 thousand more omelets were sold than in the first week. In the fourth week, 2 thousand fewer omelets were sold than in the first week. How many omelets were sold in all in June?

\[
\begin{align*}
\text{Week 1:} & \quad 10,345 \\
\text{Week 2:} & \quad 10,345 - 1,096 + 2,000 - 2,000 \\
\text{Week 3:} & \quad 10,345 + 9,249 + 8,345 + 19,594 \\
\text{Week 4:} & \quad 10,345 + 2,000 \\
\end{align*}
\]

The restaurant sold 40,284 omelets in June.
Using the diagrams below, create your own word problem. Solve for the value of the variable.

1. There were 7,104 animals at the fair. There were 4,295 pigs and 982 cows. The rest were horses. How many horses were there?

\[
\begin{align*}
4,295 & \quad + \quad 982 \\
\underline{+} & \quad \underline{+} \\
5,277 & \quad \underline{=} \quad 7,104
\end{align*}
\]

There were 1,827 horses at the fair.

2. Megan had $215,554 in her savings account. Her sister, Melanie, had $90,457 more in her bank account. How much money do Megan and Melanie have altogether?

\[
\begin{align*}
215,554 & \quad + \quad 90,457 \\
\underline{+} & \quad \underline{+} \\
306,011 & \quad \underline{=} \quad 306,011
\end{align*}
\]

\[
\begin{align*}
306,011 & \quad + \quad 215,554 \\
\underline{+} & \quad \underline{+} \\
521,565 & \quad \underline{=} \quad 521,565
\end{align*}
\]

*Together, they have $521,565.
3. Tim Hortons sold 8,200 plain bagels. They sold 3,500 fewer blueberry bagels than plain bagels. 2,010 more rye bagels were sold than plain bagels. How many bagels did they sell on this day?

\[
\begin{align*}
8,200 & \quad 8,200 & \quad 2,010 \\
\text{blueberry} & \quad \text{rye} & \\
3,500 & & \\
\hline
4,700 & & 10,210 \\
\end{align*}
\]

\[8,200 + 4,700 + 10,210 = 23,110\]

*Tim Hortons sold 23,110 bagels.*

4. Draw a tape diagram to model the following equation. Create a word problem. Solve for the value of the variable.

\[26,854 = 17,729 + 3,731 + A\]

There were 26,854 Bills fans at the Ralph. There were 17,729 men and 3,731 children in attendance. The rest were women. How many women were at the Ralph?

\[
\begin{align*}
17,729 & \quad 26,854 \\
+ & \quad - \\
3,731 & \quad 21,460 \\
\hline
21,460 & \quad 5,394 \\
\end{align*}
\]

*5,394 women were at the Ralph.*