Numbers to 1,000,000

There are 382,746 people living in Country X. The place value of each digit in 5,382,746 is as follows:

<table>
<thead>
<tr>
<th>Hundred thousands</th>
<th>Ten thousands</th>
<th>Thousands</th>
<th>Hundreds</th>
<th>Tens</th>
<th>Ones</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>8</td>
<td>2</td>
<td>7</td>
<td>4</td>
<td>6</td>
</tr>
</tbody>
</table>

300,000 + 80,000 + 2,000 + 700 + 40 + 6 is the expanded form of 382,746.

In 382,746

- 3 is in the hundred thousands place,
- 8 is in the ten thousands place,
- 2 is in the thousands place,
- 7 is in the hundreds place,
- 4 is in the tens place,
- 6 is in the ones place.

We write 382,746 in words as three hundred eighty-two thousand, seven hundred forty-six.

382,746 is the standard form.
Approximation

When we round up or round down values, these rounded values are only approximations. We use the symbol ‘≈’ to show approximation. ‘≈’ means ‘is approximately equal to’.

To round a number to a certain place value, we look at the digit in the next lower place value. If the digit is 0, 1, 2, 3, or 4, we round down. If it is 5, 6, 7, 8, or 9, we round up.

Round 381,479 to the nearest

(a) ten,
(b) hundred,
(c) thousand,
(d) ten thousand,
(e) hundred thousand.

(a) $381,479 \approx 381,480$
(b) $381,479 \approx 381,500$
(c) $381,479 \approx 381,000$
(d) $381,479 \approx 380,000$
(e) $381,479 \approx 400,000$
Multiples

The table shows the first ten multiples of 2, 3, 4, 5, 6, 7, 8, 9, and 10.

<table>
<thead>
<tr>
<th>×</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>2</td>
<td>4</td>
<td>6</td>
<td>8</td>
<td>10</td>
<td>12</td>
<td>14</td>
<td>16</td>
<td>18</td>
<td>20</td>
</tr>
<tr>
<td>3</td>
<td>3</td>
<td>6</td>
<td>9</td>
<td>12</td>
<td>15</td>
<td>18</td>
<td>21</td>
<td>24</td>
<td>27</td>
<td>30</td>
</tr>
<tr>
<td>4</td>
<td>4</td>
<td>8</td>
<td>12</td>
<td>16</td>
<td>20</td>
<td>24</td>
<td>28</td>
<td>32</td>
<td>36</td>
<td>40</td>
</tr>
<tr>
<td>5</td>
<td>5</td>
<td>10</td>
<td>15</td>
<td>20</td>
<td>25</td>
<td>30</td>
<td>35</td>
<td>40</td>
<td>45</td>
<td>50</td>
</tr>
<tr>
<td>6</td>
<td>6</td>
<td>12</td>
<td>18</td>
<td>24</td>
<td>30</td>
<td>36</td>
<td>42</td>
<td>48</td>
<td>54</td>
<td>60</td>
</tr>
<tr>
<td>7</td>
<td>7</td>
<td>14</td>
<td>21</td>
<td>28</td>
<td>35</td>
<td>42</td>
<td>49</td>
<td>56</td>
<td>63</td>
<td>70</td>
</tr>
<tr>
<td>8</td>
<td>8</td>
<td>16</td>
<td>24</td>
<td>32</td>
<td>40</td>
<td>48</td>
<td>56</td>
<td>64</td>
<td>72</td>
<td>80</td>
</tr>
<tr>
<td>9</td>
<td>9</td>
<td>18</td>
<td>27</td>
<td>36</td>
<td>45</td>
<td>54</td>
<td>63</td>
<td>72</td>
<td>81</td>
<td>90</td>
</tr>
<tr>
<td>10</td>
<td>10</td>
<td>20</td>
<td>30</td>
<td>40</td>
<td>50</td>
<td>60</td>
<td>70</td>
<td>80</td>
<td>90</td>
<td>100</td>
</tr>
</tbody>
</table>

From the table, we can see common multiples. For example, 24 is a common multiple of 6 and 8. 48 is also a common multiple of 6 and 8. So, there is more than one common multiple of 6 and 8.

6 and 8 are factors of 24 and 48.
Factors

Factor × factor = product

4 × 5 = 20
4 and 5 are factors of 20.

1 × 20 = 20
2 × 10 = 20

20 is the product of 4 and 5.

The number 20 has 6 factors.
1, 2, 4, 5, 10, and 20.

1, 2, 10, and 20 are also factors of 20.

Some numbers have exactly 2 factors.
A number greater than 1 is called a **prime number** if it has exactly **two factors**, 1 and the number itself.

\[ 1 \times 3 = 3, \ 1 \times 5 = 5, \ 1 \times 7 = 7, \ldots \]

3, 5, 7, ... are prime numbers.

A number greater than 1 is a **composite number** if it has more than two factors.

\[ 1 \times 4 = 4, \ 2 \times 2 = 4 \]

The factors of 4 are 1, 2, and 4.

Therefore, 4 is a composite number.

The number 1 is not a prime number or a composite number.
Order of Operations

An expression has numbers and operation signs (+, −, ×, ÷) but no equal sign.
An equation is a number sentence with an equal sign. The value on each side of the equal sign is the same.

When an expression involves different operation signs and parentheses, we proceed as follows:
• Do what is in the parentheses first.
• Next, carry out multiplication or division from left to right.
• Then carry out addition or subtraction from left to right.

1. Find the value of $18 + 32 ÷ 4 − 5$.

$18 + 32 ÷ 4 − 5 = 18 + 8 − 5$
$= 26 − 5$
$= 21$

2. Find the value of $32 + (16 − 2) × (4 ÷ 2)$.

$32 + (16 − 2) × (4 ÷ 2) = 32 + 14 × 2$
$= 32 + 28$
$= 60$