1. Find the $912^{\text{th}}$ number in this sequence
   \[4, 11, 18, 25, \ldots\]

2. Write a mathematically convincing argument to explain why the sum of any five consecutive integers is always divisible by 5.

3. Write a mathematically convincing argument to explain the formula
   \[1 + 2 + 3 + \ldots + n = \frac{n(n+1)}{2}\]
4. Convert these numbers to a different base as indicated.
   (a) 122101, to base 10
   (b) 542, to base 10
   (c) 191, to base 7
   (d) 817, to base 10
   (e) 163, to base 2

5. Draw a Venn Diagram for all the number systems (including fractions) and place these numbers in the proper place in the Venn Diagram.
   (a) 0.12
   (b) \( \frac{0}{7} \)
   (c) -16
   (d) \( \sqrt{10} \)
   (e) 2\( \pi \)
   (f) -4.2
   (g) 13.15\( \bar{6} \)
   (h) \( -\frac{3}{5} \)
   (i) 1
   (j) 2
   (k) 3.\( \bar{9} \)
   (l) \( -\frac{15}{5} \)
   (m) \( \sqrt{225} \)
   (n) \( \frac{1}{4} \)
   (o) 64%
   (p) 3.787787778...
6. Order these numbers and then place them on a number line.

(a) \( \frac{3}{20} \)
(b) 75%
(c) 0.67
(d) \( \frac{1}{2} \)
(e) 0.1
(f) \( \frac{1}{5} \)
(g) 0.9
(h) 0
(i) \( \frac{2}{3} \)
(j) 0.8

7. Convert these numbers from one form to another to fill up the table.

<table>
<thead>
<tr>
<th>Decimal</th>
<th>Percent</th>
<th>Fraction</th>
</tr>
</thead>
<tbody>
<tr>
<td>69.00%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.2</td>
<td></td>
<td>( \frac{11}{7} )</td>
</tr>
<tr>
<td>0.1 ( \overline{23} )</td>
<td></td>
<td>0.12375</td>
</tr>
<tr>
<td></td>
<td></td>
<td>( \frac{21}{75} )</td>
</tr>
</tbody>
</table>
8. A letter was posted that was covered with 10-cent stamps and 5-cent stamps. There were 12 stamps and the total postage was 70 cents. How many of each stamp were on the letter?

9. Two 2-digit numbers satisfy the following conditions:
   • The sum of the digits in each number is 10.
   • All four digits are different.
   • The sum of the numbers is 155.
   Determine the two numbers.

10. If a fence requires a post every 10 feet, how many posts are required for a fence that measures 100 x 100 feet?