1. \{January, June, July\};

2. *To be equal, each element should be the same, despite the order.* As we can see, none of the elements is equal, so these sets are not equal.

*To be equivalent, sets have to have an equal number of elements.* In set A, the number of elements is 3, and in set B, the number of elements – 3. **So these sets are equivalent, but not equal.**

3. If the set contains 9 elements, the number of subsets will be $2^9$.

4. The service provides us with 6 features. According to (3), a number of subsets will be $2^6$.

5. $C = A \cap B$
6. In the instructions, we see only two groups of students: who visited student council and who visited intramurals. So let's divide them into two sets: A - visited student council and B – visited intramurals.

Let's check, what’s given in instructions and what should we find:


<table>
<thead>
<tr>
<th>Given:</th>
</tr>
</thead>
<tbody>
<tr>
<td>( A \cup B = 46 )</td>
</tr>
<tr>
<td>( A/B = 30 )</td>
</tr>
<tr>
<td>( A \cap B = 4 )</td>
</tr>
<tr>
<td>( B/A = ? )</td>
</tr>
</tbody>
</table>

Let's represent the information, like a math equation.

\[ A + B + C = 46; \]

\[ A - C = 30; \]

\[ C = 4; \]

As we can see, we can solve the problem by solving a simple equation. Let's do it:

\[ A = 30 + C = 34; \]

\[ B = 46 - A - C = 46 - 34 - 4 = 8 \]

So the answer is – eight students.
Explanation: Black areas are what is True and white (and grey) – false. Union of A' and B' is everything. Because A' covers everything, but A (same for B').

As you may see from diagrams, 2nd and 3rd in a first row are not equal, so the statement is not equal.
9.

A – pumpkins, B – pies. As shown in the diagram, the result is 37.

10.

Here we need to be careful with instructions.

A (whole circuit) – mysteries

B (whole circuit) – sci-fi

C (whole circuit) – romance

Let’s do it as was shown in (6):
Given:

\[
\begin{align*}
A+G+E+F &= 44 \\
B+D+E+G &= 33 \\
C+D+E+F &= 29 \\
G+E &= 13 \\
D+E &= 5 \\
E+F &= 11 \\
E &= 2
\end{align*}
\]

\[A+B+D+E+F+G = ?\]

As we can see, we almost have an answer:

\[A + (B+D+E+G) + F = A + 33 + F = ?\]

\(F\) can be calculated from the 6th equation. \(F = 11 - E = 11 - 2 = 9\)

So now, we need to find \(A\). Let’s use the first equation:

\[
\begin{align*}
A+G+E+F &= 44 \\
A + G + E + F &= A + 13 + 9 = 44 \\
A &= 44 - 13 - 9 = 22
\end{align*}
\]

Now, let’s put everything together:

\[A + (B+D+E+G) + F = 22 + 33 + 9 = 64\]
So the answer is – sixty-four customers.