If $|\overline{A}| = 25$, $|\overline{B}| = 20$, $|A \cap B| = 10$ and $|\mathbb{U}| = 40$. Then, Find $|A - B|$ and $|B - A|$.

- $|\overline{A}| = 25$, $|\overline{B}| = 20$, $|\overline{\mathbb{U}}| = 40$ and $|\overline{A \cap B}| = 10$
- **We know,** $|\overline{\mathbb{U}}| = |\overline{A}| + |\overline{B}| + |A \cap B| - |\overline{A \cup B}|$

  So, filling in all known values

- $40 = 20 + 25 + 10 - |\overline{A \cup B}|$
- **so,** $|\overline{A \cup B}| = 55 - 25 = 15$

  Now finding $|A - B|$

- $|\overline{A}| = |A - B| + |\overline{A \cup B}|$
- $|A - B| = |\overline{A}| - |\overline{A \cup B}|$
- $|A - B| = 25 - 15 = \mathbf{10}$

  similarly,

- $|\overline{B}| = |B - A| + |\overline{A \cup B}|$
- $|B - A| = 20 - 15 = \mathbf{5}$