Problem 1:

Given:
- \( R_1 = 6 \, \Omega \)
- \( R_2 = 1 \, \Omega \)
- \( R_3 = 2 \, \Omega \)
- \( I_s = 6 \, A \)

Find:
- The equivalent resistance as seen by the source.
- The voltage across the source using Ohm’s Law.
- The current through \( R_3 \) using current division.
- The voltage across \( R_3 \) using voltage division.

\[
R_{eq} = R_2 + R_3 = 1 + 2 = 3 \, \Omega
\]

\[
I_s = \frac{1}{R_1 + \frac{1}{R_{eq}}}
\]

\[
R_{eq} = 2 \, \Omega
\]

\[
V_{T5} = R_{eq} \cdot I_s = 2 \times 6 = 12 \, V
\]

\[
I_{R23} = \frac{1}{R_{23}} \cdot I_s = \frac{1}{\frac{2}{3}} \cdot 6 = \frac{3}{2} \cdot 6 = 9 \, A
\]

\[
V_{R3} = \frac{2}{1 + 2} \cdot 12 = 8 \, V
\]