Note: Answer six questions only

Q1: Solve the following system of linear equations:

\[5x + 2y - z = 2\]
\[3x + 7y + 3z = -1\]
\[x - 4y + 6z = 1\]  \hspace{1cm} (10 M)

Q2: If A(4,2,0), B(1,3,0), and C(1,1,3), find the vector from the origin to the center of the triangle ABC?

Q3: Find the area shared between \( r_1 = 1+\sin\theta \) and \( r_2 = 1+\cos\theta \)  \hspace{1cm} (10 M)

Q4: Find the Taylor Series of the function \( \cosh(x) \), at \( a = 1 \)  \hspace{1cm} (10 M)