Term Test A version 2

(1) [5 points] Use matrix arithmetic to find the area of the following triangle:
$P = (-2, 2), Q = (5, 4), R = (1, -3)$.

(2) [5 points] Use Cramer's rule to find the values of x_2 and x_3.

$$
\begin{array}{rcrcrcl}
x_1 & + & x_2 & + & 2x_3 & = & -1 \\
2x_1 & - & x_2 & + & 2x_3 & = & -4 \\
4x_1 & + & x_2 & + & 4x_3 & = & -2
\end{array}
$$

(3) [5 points] Find the product AB.

$$
A = \begin{bmatrix} 3 + 3i & 6i \\ -5 & -4 - 7i \end{bmatrix}
\qquad
B = \begin{bmatrix} -5 + 6i & -4 - 7i \\ 2 - 5i & -7 + 2i \end{bmatrix}
$$

(4) [5 points] Find the determinant of C.

$$
C = \begin{bmatrix}
-2 & 1 & -3 & 0 \\
0 & 1 & 3 & 0 \\
-1 & 0 & 0 & 3 \\
1 & 2 & 0 & 2
\end{bmatrix}
$$