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.

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

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

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

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

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