Group member(s): Charlie

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Activity 1

1) $x = \begin{matrix}1\\5\\3\end{matrix}$ $w = \begin{matrix}c\\4\\d\end{matrix}$ $x^T = [1\ 5\ 3]$

A) $x^T \cdot w = (c + 4b + 3d)$ B) $w^T \cdot x = (c + 4b + 3c)$

2) A) $y = 2(x-1)^2 = 2x^2 - 4x + 2$ $x = \begin{bmatrix} x^2 \\ x \\ 1 \end{bmatrix}$ $w = \begin{bmatrix} 2 \\ -4 \\ 2 \end{bmatrix}$

B) $X = \begin{pmatrix} [x_1^2 \ x_1 \ 1] \\ [x_2^2 \ x_2 \ 1] \\ [x_3^2 \ x_3 \ 1] \\ [x_4^2 \ x_4 \ 1] \\ [x_5^2 \ x_5 \ 1] \end{pmatrix}$

3) A) $w = \begin{bmatrix} 9 \\ 4 \\ 4 \end{bmatrix}$ B) $X = \begin{pmatrix} [1 & 8 & 44] \\ [.5 & 2 & 25] \\ [1.3 & 2.7 & 29.3] \\ [9. & 4 & 16] \end{pmatrix}$ $w = \begin{bmatrix} 9 \\ 4 \\ 4 \end{bmatrix}$