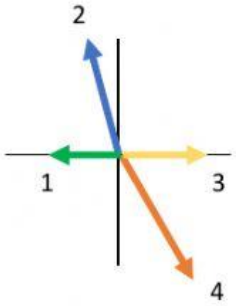
Name: _____ Score: _____
Program, Year & Section: _____ Date: _____

Vector Multiplication

Given the following vectors: (a) identify their correct diagrams, and (b) write them in unit-vector notation form.

$\vec{A}$ = $8\bar{0}\ m, 2\bar{0}°$ N of W
$\vec{B}$ = 65 m, E
$\vec{C}$ = $9\bar{0}\ m, 6\bar{0}°$ S of E
$\vec{D}$ = 55 m, W



Vector	Diagram	Unit Vector Notation
$\vec{A}$		
$\vec{B}$		
$\vec{C}$		
$\vec{D}$		

Using the vectors above, find the following:

A•B	$A \cdot B = AB\cos\theta$ $= (\quad)(\quad)\cos\_\_\_°$ $=$ _____ m^2
	$A \cdot B = A_X B_X + A_Y B_Y + A_Z B_Z$ $= (\quad)(\quad) + (\quad)(\quad) + (\quad)(\quad)$ $=$ ____ + ____ + ____ $=$ _____ m^2
BxA	$BxA = BA\sin\theta$ $= (\quad)(\quad)\sin\_\_\_°$ $=$ _____ m^2 , along the _____-axis
	$B\ x\ A = i\begin{vmatrix} B_Y & B_Z \\ A_Y & A_Z \end{vmatrix} - j\begin{vmatrix} B_X & B_Z \\ A_X & A_Z \end{vmatrix} + k\begin{vmatrix} B_X & B_Y \\ A_X & A_Y \end{vmatrix}$ $= i\begin{vmatrix} \quad & \quad \end{vmatrix} - j\begin{vmatrix} \quad & \quad \end{vmatrix} + k\begin{vmatrix} \quad & \quad \end{vmatrix}$ $= i\{(\quad)(\quad) - (\quad)(\quad)\} - j\{(\quad)(\quad) - (\quad)(\quad)\} + k\{(\quad)(\quad) - (\quad)(\quad)\}$ $=$ ___i ___j ____k

D•C	$D \cdot C = DC\cos\theta$ $= (\quad)(\quad)\cos\_\_\_^\circ$ $= \_\_\_\_\_\ \text{m}^2$
	$D \cdot C = D_X C_X + D_Y C_Y + D_Z C_Z$ $= (\quad)(\quad) + (\quad)(\quad) + (\quad)(\quad)$ $= \_\_\_\_ + \_\_\_\_ + \_\_\_\_$ $= \_\_\_\_\_\ \text{m}^2$
CxD	$C \cdot D = CD\sin\theta$ $= (\quad)(\quad)\sin\_\_\_^\circ$ $= \_\_\_\_\_\ \text{m}^2$, along the _____-axis
	$C\ x\ D = i\begin{vmatrix} C_Y & C_Z \\ D_Y & D_Z \end{vmatrix} - j\begin{vmatrix} C_X & C_Z \\ D_X & D_Z \end{vmatrix} + k\begin{vmatrix} C_X & C_Y \\ D_X & D_Y \end{vmatrix}$ $= i\begin{vmatrix} & \\ & \end{vmatrix} - j\begin{vmatrix} & \\ & \end{vmatrix} + k\begin{vmatrix} & \\ & \end{vmatrix}$ $= i\{(\quad)(\quad) - (\quad)(\quad)\} - j\{(\quad)(\quad) - (\quad)(\quad)\} +$ $k\{(\quad)(\quad) - (\quad)(\quad)\}$ $= \_\_\_i \square \_\_\_j \square \_\_\_\_k$