

B Continued

$$\begin{vmatrix} 1 & -2 \\ 42 & -12 \end{vmatrix} i + \begin{vmatrix} 4 & -2 \\ -24 & 12 \end{vmatrix} -j + \begin{vmatrix} 4 & 1 \\ -24 & 42 \end{vmatrix} k$$

$$(-12 + 84)i - (48 - 48)j + (168 - 24)k \\ = 72i + 144k$$

$$2 \quad A = P_i - 6j - 3k$$

$$B = 4i + 3j - k$$

$$C = i - 3j + 2k$$

$$\begin{vmatrix} i & -j & k \\ P & -6 & -3 \\ 4 & 3 & -1 \\ 1 & -3 & 2 \end{vmatrix}$$

$$P \begin{vmatrix} 3 & -1 \\ -3 & 2 \end{vmatrix} + 6 \begin{vmatrix} 4 & -1 \\ 1 & 2 \end{vmatrix} - 3 \begin{vmatrix} 4 & 3 \\ 1 & -3 \end{vmatrix}$$

$$3P + 54 + 45 = 0$$

$$3P = -99$$

$$P = -33$$

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MAT 102

$$1 \quad A = 4i + j - 2k$$

$$B = 3i - 2j + k$$

$$C = i - 2k$$

$$(A - 2B) \times C$$

$$A = 4i + j - 2k$$

$$- 2B = 6i - 4j + 2k$$

$$A - 2B = -2i + 5j - 4k$$

$$(A - 2B) \times C = (2i + 5j - 4k) \times (i - 2k)$$

$$= -1 + 5 - 6 = -2$$

$$2 \quad A \times (2C + 3B)$$

$$2C = 2i - 4k$$

$$3B = 9i - 6j + 3k$$

$$\begin{vmatrix} i & j & k \\ 2 & 0 & -4 \\ 9 & -6 & 3 \end{vmatrix}$$

$$\begin{vmatrix} 0 & -4 \\ -6 & 3 \end{vmatrix} i - \begin{vmatrix} 2 & -4 \\ 9 & 3 \end{vmatrix} j + \begin{vmatrix} 2 & 0 \\ 9 & -6 \end{vmatrix} k$$

$$-24i + (6 + 36)j + 12k$$

$$-24i + 42j - 12k$$

$$A \times (2C + 3B)$$

$$\begin{vmatrix} i & j & k \\ 4 & 1 & 2 \\ -24 & 42 & -12 \end{vmatrix}$$