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$$1) A = 4i + j - 2k$$

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

$$C = i + 2k$$

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

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

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

$$A - 2B$$

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

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

$$\begin{array}{r} -4i + j - 2k \\ 6i + 4j + 2k \\ \hline -2i + 5j - 4k \end{array}$$

$$-2i + 5j - 4k$$

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

$$\text{Answer } \times C = (-2i + 5j - 4k) \times i + 2k$$

$$\begin{array}{r} i(-2i + 5j - 4k) + 2k(-2i + 5j - 4k) \\ -2i + 5j - 4k + 4 \end{array}$$