

	i	j	k
2	2	-2	4
1	-3	2	1

$$\begin{aligned}
 A \times B &= ((-2 \cdot 2 - 4 \cdot -3))i - ((4 \cdot 1 - 2 \cdot 2))j + ((2 \cdot -3) - (-2 \cdot 1)) \\
 &= (-4 + 12)i - (4 - 4)j + (-6 + 2) \\
 &= 8i - 0j - 4k \\
 &= 8i - 4k
 \end{aligned}$$

$$\begin{aligned}
 1. A &= 2i - 2j + 4k \\
 B &= i - 3j + 2k
 \end{aligned}$$

$$\begin{aligned}
 A \cdot B &= (2 \cdot 1) + (-2 \cdot -3) + (4 \cdot 2) \\
 A \cdot B &= 2 + 6 + 8 \\
 &= 16
 \end{aligned}$$

	i	j	k
5	-4	2	5
2	-2	1	-2

$$\begin{aligned}
 A &= 5i - 4j + 2k \\
 B &= 2i - 2j + k
 \end{aligned}$$

$$\begin{aligned}
 A \times B &= (-4 \cdot 1 - 2 \cdot -2)i + (2 \cdot 2 - 5 \cdot 1)j + (5 \cdot -2 - (-4 \cdot 2)) \\
 &= (-4 + 4)i + (4 - 5)j + (-10 + 8)k \\
 &= 0i - 1j - 2k \\
 &= -j - 2k
 \end{aligned}$$

# Fisika

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

$$B = 4i - 3j + 2k$$

$$\begin{aligned} A \cdot B &= \begin{matrix} i & j & k \end{matrix} \\ &= (2 \cdot 4) i + (-2 \cdot -3) j + (4 \cdot 2) k \\ &= 8i + 6j + 8k \\ &= 22 \end{aligned}$$

$$A \times B = \begin{array}{ccc|ccc} i & j & k & i & j & k \\ \hline 2 & -2 & 4 & 2 & -2 & 4 \\ 4 & -3 & 2 & 4 & -3 & 2 \end{array}$$

$$\begin{aligned} &= ((-2 \cdot 2) - (4 \cdot -3)) i + ((4 \cdot 4) - (2 \cdot 2)) j + ((2 \cdot -3) - (-2 \cdot 4)) k \\ &= (-4 + 12) i + (16 - 4) j + (-6 + 8) k \\ &= 8i + 12j + 2k \end{aligned}$$