

8)

$$\det(a, b, c) = (a \times b) \cdot c$$

$$X \times (Y \times Z) = (X \cdot Z) \cdot Y - (X \cdot Y) \cdot Z$$

$$(a \times b) \times (c \times d) = [\det(a, c, d)] \cdot b - [\det(b, c, d)] \cdot a$$

$$(a \times b) \times (c \times d) = [\det(a, b, d)] \cdot c - [\det(a, b, c)] \cdot d$$

$$X \times (Y \times Z) = (X \cdot Z) \cdot Y - (X \cdot Y) \cdot Z$$

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$$(a \times b) \times (c \times d) = \underbrace{[(a \times b) \cdot d]}_{\downarrow} \cdot c - \underbrace{[(a \times b) \cdot c]}_{\downarrow} \cdot d$$

$$= [\det(a, b, d)] \cdot c - [\det(a, b, c)] \cdot d$$

$$X \times (Y \times Z) = (X \cdot Z) \cdot Y - (X \cdot Y) \cdot Z$$

~~$$(a \times b) \times (c \times d) = \underbrace{[(c \times d) \cdot a]}_{\downarrow} \cdot b - \underbrace{[(c \times d) \cdot b]}_{\downarrow} \cdot a$$~~

~~$$= [\det(a, c, d)] \cdot b - [\det(b, c, d)] \cdot a$$~~