

# 指数法則

$$a^2 \times a^5$$

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$$a^2 \times a^5 = \underbrace{a \times a}_{2 \text{ 個}} \times \underbrace{a \times a \times a \times a \times a}_{5 \text{ 個}}$$

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$$\begin{aligned} a^2 \times a^5 &= \underbrace{a \times a}_{2 \text{ 個}} \times \underbrace{a \times a \times a \times a \times a}_{5 \text{ 個}} \\ &= \underbrace{a \times a \times a \times a \times a \times a \times a}_{7 \text{ 個}} \end{aligned}$$

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$$\begin{aligned} a^2 \times a^5 &= \underbrace{a \times a}_{2 \text{ 個}} \times \underbrace{a \times a \times a \times a \times a}_{5 \text{ 個}} \\ &= \underbrace{a \times a \times a \times a \times a \times a \times a}_{7 \text{ 個}} \\ &= a^7 \end{aligned}$$

# 指数法則

つまり

The diagram illustrates the law of exponents using symbols. It shows a green star with an orange circle to its right, followed by a multiplication sign (×), another green star with a blue triangle to its right, followed by an equals sign (=), and finally a green star with an orange circle and a blue triangle to its right, separated by a plus sign (+). This represents the equation:  $a^m \times a^n = a^{m+n}$ , where the green star is 'a', the orange circle is 'm', and the blue triangle is 'n'.

# 指数法則

$$(a^2)^3$$

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$$(a^2)^3 = \underbrace{a^2 \times a^2 \times a^2}_{3 \text{ 個}}$$

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$$\begin{aligned}(a^2)^3 &= \underbrace{a^2 \times a^2 \times a^2}_{3 \text{ 個}} \\ &= \underbrace{a \times a}_{2 \text{ 個}} \times \underbrace{a \times a}_{2 \text{ 個}} \times \underbrace{a \times a}_{2 \text{ 個}}\end{aligned}$$



# 指数法則

$$\begin{aligned}(a^2)^3 &= \underbrace{a^2 \times a^2 \times a^2}_{3 \text{ 個}} \\ &= \underbrace{a \times a}_{2 \text{ 個}} \times \underbrace{a \times a}_{2 \text{ 個}} \times \underbrace{a \times a}_{2 \text{ 個}} \\ &= \underbrace{a \times a \times a \times a \times a \times a}_{6 \text{ 個}}\end{aligned}$$

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$$\begin{aligned}(a^2)^3 &= \underbrace{a^2 \times a^2 \times a^2}_{3 \text{ 個}} \\ &= \underbrace{a \times a}_{2 \text{ 個}} \times \underbrace{a \times a}_{2 \text{ 個}} \times \underbrace{a \times a}_{2 \text{ 個}} \\ &= \underbrace{a \times a \times a \times a \times a \times a}_{6 \text{ 個}} \\ &= a^6\end{aligned}$$

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つまり

$$\left( \text{★} \text{●} \right) \text{▲} = \text{★} \text{●} \times \text{▲}$$

# 指数法則

$$(ab)^4$$

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$$(ab)^4 = \underbrace{ab \times ab \times ab \times ab}_{4 \text{ 個}}$$

# 指数法則

$$\begin{aligned}(ab)^4 &= \underbrace{ab \times ab \times ab \times ab}_{4 \text{ 個}} \\ &= a^4 b^4\end{aligned}$$

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$$\left( \star \diamond \right) \circ = \star \circ \diamond \circ$$

# 指数法則

$$a^2 \div a^5$$



# 指数法則

$$a^2 \div a^5 = \frac{a^2}{a^5}$$

# 指数法則

$$\begin{aligned} a^2 \div a^5 &= \frac{a^2}{a^5} \\ &= \frac{a \times a}{a \times a \times a \times a \times a} \end{aligned}$$

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$$\begin{aligned} a^2 \div a^5 &= \frac{a^2}{a^5} \\ &= \frac{a \times a}{a \times a \times a \times a \times a} \\ &= \frac{1}{a \times a \times a} \end{aligned}$$

# 指数法則

$$\begin{aligned} a^2 \div a^5 &= \frac{a^2}{a^5} \\ &= \frac{a \times a}{a \times a \times a \times a \times a} \\ &= \frac{1}{a \times a \times a} = \frac{1}{a^3} = a^{-3} \end{aligned}$$

# 指数法則

つまり

The diagram illustrates the division rule of exponents using symbols. It shows a green star with an orange circle as an exponent, divided by a green star with a blue triangle as an exponent, which is equal to a green star with an orange circle minus a blue triangle as an exponent.

$$\text{★}^{\text{●}} \div \text{★}^{\text{▲}} = \text{★}^{\text{●} - \text{▲}}$$