

反射テスト 文字式 指数法則 乗除 基礎 01

1. 次の計算をせよ。(S級 25秒, A級 40秒, B級 1分20秒, C級 2分)

(1) $x^3 \times x^6$

(2) $a^3 \div a^5$

(3) $t^5 \times t^2 \times t$

(4) $k^8 \div k^5 \div k^3$

(5) $(x^3)^2 \div x^8$

(6) $x^4 \div x^8 \times (x^2)^3$

(7) $(x^3)^3 \div x^5 \times x^6 \div x^5$

(8) $a^3 \div (a^2)^4 \times a^4 \div a^5$

2. 次の計算をせよ。(S級 28 秒, A級 45 秒, B級 1 分 30 秒, C級 2 分 20 秒)

(1) $x^3 \times x^4$

(2) $a^2 \div a^6$

(3) $t^2 \times t \times t^4$

(4) $k^4 \div k^2 \div k^3$

(5) $(x^4)^2 \div x^8$

(6) $x \div (x^3)^2 \times (x^3)^4$

(7) $(x^2)^2 \div x^5 \times x^4 \div x^2$

(8) $a^3 \div (a^5)^2 \times (a^2)^4 \div a^4$

反射テスト 文字式 指数法則 乗除 基礎 01 解答解説

1. 次の計算をせよ。(S級 25秒, A級 40秒, B級 1分20秒, C級 2分)

(1) $x^3 \times x^6$

$$\begin{aligned} &= x^{3+6} \\ &= x^9 \quad \dots\text{答え} \end{aligned}$$

(2) $a^3 \div a^5$

$$\begin{aligned} &= \frac{a^3}{1} \times \frac{1}{a^5} \\ &= \frac{a^3}{a^5} \\ &= \frac{1}{a^{5-3}} \\ &= \frac{1}{a^2} \quad \dots\text{答え} \end{aligned}$$

(3) $t^5 \times t^2 \times t$

$$\begin{aligned} &= t^{5+2+1} \\ &= t^8 \quad \dots\text{答え} \end{aligned}$$

(4) $k^8 \div k^5 \div k^3$

$$\begin{aligned} &= \frac{k^8}{1} \times \frac{1}{k^5} \times \frac{1}{k^3} \\ &= \frac{k^8}{k^5 \times k^3} \\ &= \frac{k^8}{k^8} \\ &= 1 \quad \dots\text{答え} \end{aligned}$$

(5) $(x^3)^2 \div x^8$

$$\begin{aligned} &= x^6 \div x^8 \\ &= \frac{x^6}{1} \times \frac{1}{x^8} \\ &= \frac{x^6}{x^8} \\ &= \frac{1}{x^2} \quad \dots\text{答え} \end{aligned}$$

(6) $x^4 \div x^8 \times (x^2)^3$

$$\begin{aligned} &= x^4 \div x^8 \times x^6 \\ &= \frac{x^4}{1} \times \frac{1}{x^8} \times \frac{x^6}{1} \\ &= \frac{x^4 \times x^6}{x^8} \\ &= \frac{x^{10}}{x^8} \\ &= x^2 \quad \dots\text{答え} \end{aligned}$$

(7) $(x^3)^3 \div x^5 \times x^6 \div x^5$

$$\begin{aligned} &= x^9 \div x^5 \times x^6 \div x^5 \\ &= \frac{x^9}{1} \times \frac{1}{x^5} \times \frac{x^6}{1} \times \frac{1}{x^5} \\ &= \frac{x^9 \times x^6}{x^5 \times x^5} \\ &= \frac{x^{15}}{x^{10}} \\ &= x^5 \quad \dots\text{答え} \end{aligned}$$

(8) $a^3 \div (a^2)^4 \times a^4 \div a^5$

$$\begin{aligned} &= a^3 \div a^8 \times a^4 \div a^5 \\ &= \frac{a^3}{1} \times \frac{1}{a^8} \times \frac{a^4}{1} \times \frac{1}{a^5} \\ &= \frac{a^3 \times a^4}{a^8 \times a^5} \\ &= \frac{a^7}{a^{13}} \\ &= \frac{1}{a^6} \quad \dots\text{答え} \end{aligned}$$

2. 次の計算をせよ。(S級 28 秒, A級 45 秒, B級 1 分 30 秒, C級 2 分 20 秒)

(1) $x^3 \times x^4$

$$\begin{aligned} &= x^{3+4} \\ &= x^7 \quad \dots\text{答え} \end{aligned}$$

(2) $a^2 \div a^6$

$$\begin{aligned} &= \frac{a^2}{1} \times \frac{1}{a^6} \\ &= \frac{a^2}{a^6} \\ &= \frac{1}{a^{6-2}} \\ &= \frac{1}{a^4} \quad \dots\text{答え} \end{aligned}$$

(3) $t^2 \times t \times t^4$

$$\begin{aligned} &= t^{2+1+4} \\ &= t^7 \quad \dots\text{答え} \end{aligned}$$

(4) $k^4 \div k^2 \div k^3$

$$\begin{aligned} &= \frac{k^4}{1} \times \frac{1}{k^2} \times \frac{1}{k^3} \\ &= \frac{k^4}{k^2 \times k^3} \\ &= \frac{k^4}{k^5} \\ &= \frac{1}{k} \quad \dots\text{答え} \end{aligned}$$

(5) $(x^4)^2 \div x^8$

$$\begin{aligned} &= x^8 \div x^8 \\ &= \frac{x^8}{1} \times \frac{1}{x^8} \\ &= \frac{x^8}{x^8} \\ &= 1 \quad \dots\text{答え} \end{aligned}$$

(6) $x \div (x^3)^2 \times (x^3)^4$

$$\begin{aligned} &= x \div x^6 \times x^{12} \\ &= \frac{x}{1} \times \frac{1}{x^6} \times \frac{x^{12}}{1} \\ &= \frac{x \times x^{12}}{x^6} \\ &= \frac{x^{13}}{x^6} \\ &= x^7 \quad \dots\text{答え} \end{aligned}$$

(7) $(x^2)^2 \div x^5 \times x^4 \div x^2$

$$\begin{aligned} &= x^4 \div x^5 \times x^4 \div x^2 \\ &= \frac{x^4}{1} \times \frac{1}{x^5} \times \frac{x^4}{1} \times \frac{1}{x^2} \\ &= \frac{x^4 \times x^4}{x^5 \times x^2} \\ &= \frac{x^8}{x^7} \\ &= x \quad \dots\text{答え} \end{aligned}$$

(8) $a^3 \div (a^5)^2 \times (a^2)^4 \div a^4$

$$\begin{aligned} &= a^3 \div a^{10} \times a^8 \div a^4 \\ &= \frac{a^3}{1} \times \frac{1}{a^{10}} \times \frac{a^8}{1} \times \frac{1}{a^4} \\ &= \frac{a^3 \times a^8}{a^{10} \times a^4} \\ &= \frac{a^{11}}{a^{14}} \\ &= \frac{1}{a^3} \quad \dots\text{答え} \end{aligned}$$