

3月第2週 新高2 数Ⅱ

演習-1 次の式を簡単にしなさい。

$$\textcircled{1} \frac{\frac{3}{4}}{\frac{6}{7}}$$

$$\textcircled{2} \frac{1 - \frac{1}{6}}{\frac{1}{4} + \frac{2}{3}}$$

$$\textcircled{3} \frac{1 + \frac{3}{1 + \frac{1}{2}}}{2 + \frac{1 - \frac{1}{2}}{1 + \frac{1}{2}}}$$

$$\textcircled{4} 1 - \frac{2}{1 - \frac{3}{1 - \frac{4}{5}}}$$

$$\textcircled{5} \frac{1}{1 + \frac{1}{2 + \frac{1}{3 + \frac{1}{4}}}}$$

演習-2 次の式を簡単にしなさい。

$$\textcircled{1} \frac{\frac{1}{x}}{1 - \frac{1}{x}}$$

$$\textcircled{2} \frac{1}{1 - \frac{1}{1 + \frac{1}{a}}}$$

$$\textcircled{3} \frac{1 - \frac{a+b}{a-b}}{1 + \frac{a+b}{a-b}}$$

$$\textcircled{4} \frac{\frac{a}{1 + \frac{4}{a}}}{a - \frac{4}{1 + \frac{4}{a}}}$$

演習-3 各文字の値を求めなさい。

$$\textcircled{1} \frac{11}{25} = \frac{1}{2 + \frac{a}{11}}$$

$$\textcircled{2} \frac{7}{26} = \frac{1}{a + \frac{1}{b + \frac{1}{c + \frac{1}{d}}}}$$

$$\textcircled{3} \frac{27}{8} = a + \frac{1}{b + \frac{1}{c + \frac{1}{d}}}$$

$$\textcircled{4} \frac{100}{71} = a + \frac{1}{b + \frac{1}{c + \frac{1}{d + \frac{1}{e}}}}$$

演習-4

$$1 + \frac{1}{2 + \frac{1}{2 + \frac{1}{2 + \frac{1}{2 + \dots}}}}$$

の値を求めよ。

演習－1 模範解答

$$\textcircled{1} \frac{7}{8} \quad \textcircled{2} \text{与式} = \frac{\frac{5}{6}}{\frac{11}{12}} = \frac{10}{11} \quad \textcircled{3} \text{与式} = \frac{1 + \frac{3}{2}}{2 + \frac{2}{3}} = \frac{1 + 2}{2 + \frac{1}{3}} = \frac{3}{\frac{7}{3}} = \frac{9}{7}$$

$$\textcircled{4} \text{与式} = 1 - \frac{2}{1 - \frac{3}{5}} = 1 - \frac{2}{1 - 15} = 1 - \frac{2}{-14} = 1 + \frac{1}{7} = \frac{8}{7}$$

$$\textcircled{5} \text{与式} = \frac{1}{1 + \frac{1}{2 + \frac{1}{\frac{13}{4}}}} = \frac{1}{1 + \frac{1}{2 + \frac{4}{13}}} = \frac{1}{1 + \frac{1}{\frac{30}{13}}} = \frac{1}{1 + \frac{13}{30}} = \frac{1}{\frac{43}{30}} = \frac{30}{43}$$

演習－2 模範解答

$$\textcircled{1} \text{与式} = \frac{\frac{1}{x}}{\frac{x-1}{x}} = \frac{1}{x-1} \quad \textcircled{2} \text{与式} = \frac{1}{1 - \frac{1}{a+1}} = \frac{1}{1 - \frac{1}{a+1}} = \frac{1}{\frac{a}{a+1}} = a+1 \quad \textcircled{3} \text{与式} = \frac{\frac{-2b}{a-b}}{\frac{2a}{a-b}} = -\frac{b}{a}$$

$$\textcircled{4} \text{与式} = \frac{\frac{a}{a+4}}{a - \frac{4}{a+4}} = \frac{\frac{a^2}{a+4}}{a - \frac{4a}{a+4}} = \frac{\frac{a^2}{a+4}}{\frac{a^2}{a+4}} = 1$$

演習－3 模範解答

$$\textcircled{1} \frac{11}{25} = \frac{1}{\frac{25}{11}} = \frac{1}{2 + \frac{3}{11}} \text{より, } a=3$$

$$\textcircled{2} \frac{7}{26} = \frac{1}{\frac{26}{7}} = \frac{1}{3 + \frac{5}{7}} = \frac{1}{3 + \frac{1}{\frac{7}{5}}} = \frac{1}{3 + \frac{1}{1 + \frac{2}{5}}} = \frac{1}{3 + \frac{1}{1 + \frac{1}{\frac{5}{2}}}} = \frac{1}{3 + \frac{1}{1 + \frac{1}{2 + \frac{1}{2}}}} \text{より, } a=3, b=1, c=2, d=2$$

$$\textcircled{3} \frac{27}{8} = 3 + \frac{3}{8} = 3 + \frac{1}{\frac{8}{3}} = 3 + \frac{1}{2 + \frac{2}{3}} = 3 + \frac{1}{2 + \frac{1}{\frac{3}{2}}} = 3 + \frac{1}{2 + \frac{1}{1 + \frac{1}{2}}} \text{より, } a=3, b=2, c=1, d=2$$

$$\textcircled{4} \frac{100}{71} = 1 + \frac{29}{71} = 1 + \frac{1}{\frac{71}{29}} = 1 + \frac{1}{2 + \frac{13}{29}} = 1 + \frac{1}{2 + \frac{1}{\frac{29}{13}}} = 1 + \frac{1}{2 + \frac{1}{2 + \frac{3}{13}}} = 1 + \frac{1}{2 + \frac{1}{2 + \frac{1}{\frac{13}{3}}}} = 1 + \frac{1}{2 + \frac{1}{2 + \frac{1}{4 + \frac{1}{3}}}} \text{ より,}$$

$$a=1, b=2, c=2, d=4, e=3$$

演習-4 模範解答

$$\sqrt{2}$$