

2008 穎明館中学校

1. (1) $\frac{225}{11} - \frac{31}{15} - \frac{127}{7} = \square$ です。

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1. 次の計算をなさい。

(1) $95 - 56 \div 8 + 84 \div 14 \times 2$

(2) $3\frac{1}{2} - 2\frac{2}{3} + \frac{4}{9} - 1\frac{1}{6}$

(3) $(5 - 4\frac{4}{5} \div \frac{8}{7}) \times (1.25 + 2.5)$

(4) $2.34 \times 0.25 + 4.68 \times \frac{1}{4} + 23.4 \times 0.125$

2. 次の式を満たす x の値を求めなさい。

$(2 + x \div \frac{3}{2}) \div 0.7 = 6\frac{2}{3}$

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1. (1) $100 - 32.9 \div 0.07 \times 0.04 = \square$

(2) $\frac{1}{34} + \frac{1}{85} + \frac{1}{170} = \square$

(3) $(\frac{3}{4} + 2.75) \div \frac{5}{7} + 1.3 \times (1 - \frac{4}{15} \times \frac{5}{3}) = \square$

(4) $\frac{9}{2} \times (\frac{1}{\square} - \frac{1}{9}) + 2 \times \frac{1}{3} = \frac{3}{4}$

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1. (1) $\frac{1}{3} + 1\frac{2}{3} \div (5\frac{1}{3} - \square) = \frac{5}{6}$

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1. (1) $(1.5 - \frac{1}{3}) \div 2.04 \times (\frac{5}{8} - 0.285)$

(2) $1 + \frac{1}{1 + \frac{1}{1 + \frac{1}{1 + \frac{1}{5}}}}$

(3) $\frac{1}{2} + \frac{1}{6} + \frac{1}{12} + \frac{1}{20} + \frac{1}{30} + \frac{1}{42} + \frac{1}{56} + \frac{1}{72}$

(4) $\square \div 4\frac{1}{5} \times 3\frac{1}{4} + 1\frac{1}{2} = 3\frac{11}{36}$ \square にあてはまる数を求めなさい。

(5) $1 + \frac{1}{2} + \frac{1}{3} + \frac{1}{4} + \frac{1}{5} + 3 \times (\frac{1}{2} + \frac{1}{3} + \frac{1}{4} + \frac{1}{5}) + 5 \times (\frac{1}{3} + \frac{1}{4} + \frac{1}{5}) + 7 \times (\frac{1}{4} + \frac{1}{5}) + 9 \times \frac{1}{5}$

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$$1, \text{ (1) } \frac{225}{11} - \frac{31}{15} - \frac{127}{7}$$

$$= \frac{225 \times 15 \times 7 - 31 \times 11 \times 7 - 127 \times 11 \times 15}{11 \times 15 \times 7}$$

$$= \frac{23625 - 2387 - 20955}{11 \times 15 \times 7}$$

$$= \frac{283}{11 \times 15 \times 7} = \frac{283}{1155}$$

$$\begin{array}{r} 15 \\ \times 7 \\ \hline 105 \end{array}$$

$$\begin{array}{r} 225 \\ \times 105 \\ \hline 1125 \\ 2250 \\ \hline 23625 \\ - 20955 \\ \hline \end{array}$$

$$\begin{array}{r} 105 \\ \times 11 \\ \hline 105 \\ 105 \\ \hline 1155 \end{array}$$

$$\begin{array}{r} 267.0 \\ - 2387 \\ \hline 283 \end{array}$$

$$\begin{array}{r} 31 \\ \times 77 \\ \hline 217 \\ 217 \\ \hline 2387 \end{array}$$

$$\begin{array}{r} 127 \\ \times 165 \\ \hline 635 \\ 782 \\ 127 \\ \hline 20955 \end{array}$$

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1. (1) $95 - \underbrace{56}_{7} \div \underbrace{8}_{6} + \underbrace{84}_{12} \div \underbrace{14}_{12} \times 2$

$$= 95 - 7 + 12 = \underline{\underline{100}}$$

$$\begin{aligned} (2) \quad & 3\frac{1}{2} - 2\frac{2}{3} + \frac{4}{9} - 1\frac{1}{6} \\ &= \frac{63}{18} - \frac{48}{18} + \frac{8}{18} - \frac{21}{18} \\ &= \frac{2}{18} = \underline{\underline{\frac{1}{9}}} \end{aligned}$$

$$\begin{array}{r} 63 \\ - 48 \\ \hline 15 \end{array} \quad \begin{array}{r} 15 \\ + 8 \\ \hline 23 \end{array} \quad \begin{array}{r} 23 \\ - 21 \\ \hline 2 \end{array}$$

$$\begin{aligned} (3) \quad & \left(5 - 4 \frac{4}{5} \div \frac{8}{7} \right) \times (1.25 + 2.5) \\ &= \left(5 - \frac{4}{5} \times \frac{7}{8} \right) \times 3.75 \quad \left(3 \frac{3}{4} \right) \\ &= \frac{25-24}{1} \times \frac{15^3}{1} = \underline{\underline{3}} \end{aligned}$$

$$\begin{aligned} & \quad (\frac{1}{4}) \\ (4) \quad & 2.34 \times 0.25 + 4.68 \times \frac{1}{4} + 23.4 \times 0.125 \\ & = (2.34 + 4.68) \times \frac{1}{4} + 23.4 \times \frac{1}{8} \\ & \quad \quad \quad \swarrow \quad \searrow \\ & \quad \quad \quad 7.02 \\ & = 1.755 + 2.925 = 4.68 \\ & \qquad \qquad \qquad = \underline{\underline{4.68}} \end{aligned}$$

$$2. (2 + x \div \frac{3}{2}) + 0.7 = 6\frac{2}{3}$$

$$) = 0.7 \times \frac{20}{3} = \frac{7}{1} \times \frac{20^2}{3} = \frac{14}{3}$$

$$2 + x \div \frac{3}{2} = \frac{14}{3}$$

$$x \div \frac{3}{2} = \frac{14}{3} - 2 = \frac{8}{3}$$

$$x = \frac{3}{2} \times \frac{8}{3} = \underline{\underline{4}}$$

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$$1. (1) 100 - 32.9 \div 0.04 \times 0.04$$

$$= 100 - \frac{47329}{10} \times \frac{4}{100} \times \frac{4}{100}$$

$$= 100 - 18.8$$

$$= \underline{\underline{81.2}}$$

$$(2) \frac{1}{34} + \frac{1}{85} + \frac{1}{170}$$

$$= \frac{1}{17 \times 2} + \frac{1}{17 \times 5} + \frac{1}{17 \times 10}$$

$$= \frac{5 + 2 + 1}{17 \times 10} = \underline{\underline{\frac{4}{85}}}$$

$$(3) \left(\frac{3}{4} + 2\frac{3}{4} \right) \div \frac{5}{7} + 1.3 \times \left(1 - \frac{4}{15} \times \frac{5}{3} \right)$$

$$= 3\frac{1}{2} \times \frac{7}{5} + 1.3 \times \left(1 - \frac{4}{9} \right)$$

$$= \frac{7}{2} \times \frac{7}{5} + \frac{13}{10} \times \frac{5}{9}$$

$$= \frac{49}{10} + \frac{13}{18} = \frac{506}{90} = \frac{253}{45} = \underline{\underline{5\frac{28}{45}}}$$

$$(4) \left\{ \frac{9}{2} \times \left(\frac{1}{\square} - \frac{1}{9} \right) + 2 \right\} \times \frac{1}{3} = \frac{3}{4}$$

$$\text{②} \quad \text{①} \quad \text{③}$$

$$\text{③} = \frac{3}{4} \div \frac{1}{3} = \frac{9}{4}$$

$$\text{②} = \frac{9}{4} - 2 = \frac{1}{4}$$

$$\text{①} = \frac{1}{4} \div \frac{9}{2} = \frac{1}{18}$$

$$\frac{1}{\square} = \frac{1}{18} + \frac{1}{9} = \frac{3}{18} = \frac{1}{6}$$

$$\square = 6$$

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$$1. (1) \frac{1}{3} + \frac{2}{3} \div \left(5\frac{1}{3} - \square \right) = \frac{5}{6}$$

$$\text{②} \quad \text{①}$$

$$\text{②} = \frac{5}{6} - \frac{1}{3} = \frac{3}{6} = \frac{1}{2}$$

$$\text{①} = \frac{2}{3} \div \frac{1}{2} = \frac{5}{3} \times 2 = \frac{10}{3} = 3\frac{1}{3}$$

$$\square = 5\frac{1}{3} - 3\frac{1}{3} = \underline{\underline{2}}$$

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$$1. (1) (1.5 - \frac{1}{3}) \div 2.04 \times (\frac{5}{8} - 0.285) = \frac{7}{6} \times \frac{700}{204} \times \frac{34}{100} = \frac{7}{36}$$

難 (2) $1 + \frac{1}{1 + \frac{1}{1 + \frac{1}{1 + \frac{1}{1 + \frac{1}{5}}}}} = 1 + 1 \div (1 + \frac{1}{1 + \frac{1}{5}}) = 1 + 1 \div \{1 + 1 \div (1 + 1 \div \frac{6}{5})\}$

$$= 1 + 1 \div \{1 + 1 \div (1 + \frac{5}{6})\} = 1 + 1 \div (1 + 1 \div \frac{11}{6})$$

$$= 1 + 1 \div \frac{17}{11} = 1 \frac{11}{17}$$

考え方

$$\frac{\Delta}{0} = \Delta \div 0$$

難 (3) $\frac{1}{2} + \frac{1}{6} + \frac{1}{12} + \frac{1}{20} + \frac{1}{30} + \frac{1}{42} + \frac{1}{56} + \frac{1}{72}$

$$= \frac{1}{1 \times 2} + \frac{1}{2 \times 3} + \frac{1}{3 \times 4} + \frac{1}{4 \times 5} + \frac{1}{5 \times 6} + \frac{1}{6 \times 7} + \frac{1}{7 \times 8} + \frac{1}{8 \times 9}$$

$$= \frac{1}{1} - \frac{1}{2} + \frac{1}{2} - \frac{1}{3} + \dots + \frac{1}{7} - \frac{1}{8} + \frac{1}{8} - \frac{1}{9} = 1 - \frac{1}{9} = \frac{8}{9}$$

(4) $\square \div 4 \frac{1}{5} \times 3 \frac{1}{4} + 1 \frac{1}{2} = 3 \frac{11}{36}$ ② $= 3 \frac{11}{36} - 1 \frac{1}{2} = 2 \frac{47}{36} - 1 \frac{18}{36} = 1 \frac{29}{36}$

① $\times) \frac{1}{4} = 1 \frac{29}{36}$ ① $= \frac{65}{36} \div \frac{13}{4} = \frac{65}{36} \times \frac{4}{13} = \frac{5}{9}$

$\square \div 4 \frac{1}{5} = \frac{5}{9}$ $\square = \frac{21}{5} \times \frac{5}{9} = \frac{7}{3} = 2 \frac{1}{3}$

難 (5) $1 + \frac{1}{2} + \frac{1}{3} + \frac{1}{4} + \frac{1}{5} + 3 \times (\frac{1}{2} + \frac{1}{3} + \frac{1}{4} + \frac{1}{5}) + 5 \times (\frac{1}{3} + \frac{1}{4} + \frac{1}{5}) + 7 \times (\frac{1}{4} + \frac{1}{5}) + 9 \times \frac{1}{5}$

$$= 1 + \frac{1}{2} \times (1+3) + \frac{1}{3} \times (1+3+5) + \frac{1}{4} \times (1+3+5+7) + \frac{1}{5} \times (1+3+5+7+9)$$

$$= 1 + \frac{4}{2} + \frac{9}{3} + \frac{16}{4} + \frac{25}{5}$$

$$= 1 + 2 + 3 + 4 + 5$$

$$= \underline{\underline{15}}$$

3 $\times (\frac{1}{2} + \frac{1}{3} + \frac{1}{4} + \frac{1}{5})$
 $= 3 \times \frac{1}{2} + 3 \times \frac{1}{3} + 3 \times \frac{1}{4} + 3 \times \frac{1}{5}$
 7 $\times (\frac{1}{4} + \frac{1}{5})$
 9 $\times \frac{1}{5}$