基礎ゼミナール
演習問題3

問題1. 次の計算をせよ。

(1) $\dfrac{2}{13} \times \dfrac{47}{53} + \dfrac{11}{13} \times \dfrac{47}{53}$ $= \left(\dfrac{2}{13} + \dfrac{11}{13}\right) = \dfrac{47}{53}$

(2) $\dfrac{7}{6} \times \dfrac{3}{5} + \left(\dfrac{2}{3} + \dfrac{1}{2}\right) \times \dfrac{2}{5} - 1$ $= \dfrac{7}{6} \times \dfrac{3}{5} + \dfrac{7}{6} \times \dfrac{2}{5} - 1 = \dfrac{1}{6}$

(3) $\left(0.28 - \dfrac{1}{5}\right) \div \left(0.4 + \dfrac{2}{3}\right)$ $= \left(\dfrac{7}{25} - \dfrac{1}{5}\right) \div \left(\dfrac{2}{5} + \dfrac{2}{3}\right) = \dfrac{2}{25} \times \dfrac{15}{16} = \dfrac{3}{40}$

(4) 0.32×0.25 $= 0.32 \times \dfrac{1}{4} = 0.08$

(5) $\dfrac{1}{2} - \dfrac{1}{3} + \dfrac{1}{4} - \dfrac{1}{5}$ $= \dfrac{30 - 20 + 15 - 12}{60} = \dfrac{13}{60}$

(6) 103×97 $= (100 + 3) \times (100 - 3) = 10000 - 9 = 9991$

(7) $\left(\dfrac{1}{3} - \dfrac{2}{7}\right) \times (-63)$ $= -21 + 18 = -3$

(8) 0.104×0.125 $= 0.104 \times \dfrac{1}{8} = 0.013$

(9) $0.375 \times \dfrac{5}{12} + \dfrac{1}{8} \times \dfrac{5}{12}$ $= \left(\dfrac{3}{8} + \dfrac{1}{8}\right) \dfrac{5}{12} = \dfrac{5}{24}$

(10) $\dfrac{1}{1 \cdot 2} + \dfrac{1}{2 \cdot 3} + \dfrac{1}{3 \cdot 4} + \dfrac{1}{4 \cdot 5}$ $= 1 - \dfrac{1}{2} + \dfrac{1}{2} - \dfrac{1}{3} + \dfrac{1}{3} - \dfrac{1}{4} + \dfrac{1}{4} - \dfrac{1}{5} = \dfrac{4}{5}$

(11) $1.75 \div \dfrac{7}{3} - \dfrac{3}{4} \times \dfrac{1}{5} = \dfrac{7}{4} \times \dfrac{3}{7} - \dfrac{3}{4} \times \dfrac{1}{5} = \dfrac{3}{4} \times \dfrac{4}{5} = \dfrac{3}{4} - \dfrac{3}{4} \times \dfrac{1}{5} = \dfrac{3}{5}$

(12) $\left(\dfrac{1}{6} - 0.075\right) \div 0.0125 = \left(\dfrac{1}{6} - \dfrac{3}{40}\right) \times 80 = \dfrac{20 - 9}{120} \times 80 = \dfrac{22}{3}$

問題2. 次の方程式を解け。

(1) $\dfrac{x}{3} - \dfrac{x}{2} + 1 = 0$ $\quad -\dfrac{x}{6} + 1 = 0 \;\therefore x = 6$

(2) $3(x - 4) = 7(3 + x)$ $\quad -33 = 4x \;\therefore x = -\dfrac{33}{4}$

(3) $2x + 6 - 3(x - 4) = 0$ $\quad -x + 18 = 0 \;\therefore x = 18$

(4) $5x + 3 = -5(1 - x) - 2$ $\quad 5x + 3 = 5x - 7 \;\therefore 解なし$

(5) $\dfrac{x}{2} - \dfrac{x - 1}{3} + \dfrac{x - 2}{4} = 1$ $\quad \dfrac{6x - 4x + 4 + 3x - 6}{12} = 1 \;\therefore x = \dfrac{14}{5}$