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) $0.32\times0.25 \;=0.32\times\dfrac{1}{4}=0.08$

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

(6) $103\times97 \;=(100+3)\times(100-3)=10000-9=9991$

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

(8) $0.104\times0.125 \;=0.104\times\dfrac{1}{8}=0.013$

(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) $\dfrac{1}{1\cdot2}+\dfrac{1}{2\cdot3}+\dfrac{1}{3\cdot4}+\dfrac{1}{4\cdot5} \;=1-\dfrac{1}{2}+\dfrac{1}{2}-\dfrac{1}{3}+\dfrac{1}{3}-\dfrac{1}{4}+\dfrac{1}{4}-\dfrac{1}{5}=\dfrac{4}{5}$

(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) $\left(\dfrac{1}{6}-0.075\right)\div0.0125=\left(\dfrac{1}{6}-\dfrac{3}{40}\right)\times80=\dfrac{20-9}{120}\times80=\dfrac{22}{3}$

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