

教科書 25ページ 練習5

(1)  $2-i$       (2)  $\sqrt{3}+2i$       (3)  $-\sqrt{2}i$       (4)  $-5$

練習6

$$\begin{aligned}
 (1) \frac{5+i}{2+3i} &= \frac{(5+i)(\cancel{2-3i})}{(2+3i)(\cancel{2-3i})} \\
 &= \frac{10-15i+2i-3i^2}{2^2-(3i)^2} = \frac{10-13i-3\cdot(-1)}{4-9i^2} \\
 &= \frac{10-13i+3}{4-9\cdot(-1)} = \frac{13-13i}{4+9} \\
 &= \frac{13-13i}{13} = \frac{13}{13} - \frac{13}{13}i = 1-i \quad (\text{答}) \quad 1-i
 \end{aligned}$$

$$\begin{aligned}
 (2) \frac{4-i}{3-2i} &= \frac{(4-i)(\cancel{3+2i})}{(3-2i)(\cancel{3+2i})} \\
 &= \frac{12+8i-3i-2i^2}{3^2-(2i)^2} = \frac{12+5i-2\cdot(-1)}{9-4i^2} \\
 &= \frac{12+5i+2}{9-4\cdot(-1)} = \frac{14+5i}{9+4} \\
 &= \frac{14+5i}{13} = \frac{14}{13} + \frac{5}{13}i \quad (\text{答}) \quad \frac{14}{13} + \frac{5}{13}i
 \end{aligned}$$

$$\begin{aligned}
 (3) \frac{1}{2-i} &= \frac{1\cdot(\cancel{2+i})}{(2-i)(\cancel{2+i})} \\
 &= \frac{2+i}{2^2-i^2} = \frac{2+i}{4-(-1)} \\
 &= \frac{2+i}{5} = \frac{2}{5} + \frac{1}{5}i \quad (\text{答}) \quad \frac{2}{5} + \frac{1}{5}i
 \end{aligned}$$

$$(4) \frac{1}{i} = \frac{1\cdot(\cancel{-i})}{i\cdot(\cancel{-i})} = \frac{-i}{-i^2} = \frac{-i}{-(-1)} = \frac{-i}{1} = -i \quad (\text{答}) \quad -i$$