1) $\frac{2-3i}{2-i} \cdot \frac{2+i}{2+i} = \frac{4+2i-6i-3i^2}{2^2-i^2} = \frac{7-4i}{5}$

$= \frac{7}{5} - \frac{4}{5}i$

2) $4 \cdot \frac{\frac{2-4i}{3+i}}{\frac{6+3i}{8+6i}} = 4 \cdot \frac{2-4i}{3+i} \cdot \frac{8+6i}{6+3i}$

$= 4 \cdot \frac{4}{3} \cdot \frac{(1-2i)\cdot(4+3i)}{(3+i)\cdot(2+i)} = \frac{16}{3} \cdot \frac{10-5i}{5+5i} = \frac{16}{3} \cdot \frac{5(2-i)}{5\cdot(1+i)}$

$= \frac{16}{3} \cdot \frac{2-i}{1+i} \cdot \frac{1-i}{1-i} = \frac{8}{\frac{16}{3}} \cdot \frac{1-3i}{2} = \frac{8}{3} - 8i$

1) $(1-2i)^3 \cdot [(3-1)(2i+6)\cdot i]$

$(a+b)^4$

0 : 1

1 : 1 1

2 : 1 2 1

→ 3 : 1 3 3 1

4 : 1 4 6 4 1

$(1-2i)^3$

$1\cdot 1^3(2i)^0 - 3\cdot 1^2(2i)^1 + 3\cdot 1^1(2i)^2 - 1\cdot 1^0(2i)^3$

$1 \quad -6i \quad -12 \quad +8i$

$(2i-11)\cdot[(3-i)(3+i)\cdot 2i]$

$(2i-11)\cdot[(3^2-i^2)\cdot 2i] = (2i-11)\cdot 20i$

$40i^2 - 220i = -40 - 220i$

$z = -40 - 220i$

$r = \sqrt{40^2 + 220^2} = \sqrt{1600 + 48400} = \sqrt{50.000}$

$\alpha = \arctan\frac{-220}{-40} + 180^\circ = \arctan 11/2 + \pi$

Teilmenge $=$ $\leq$; $\geq$

$\Downarrow$

antisym. $\quad (x/y) \quad x \leq y$

$x, y \in \mathbb{N}$

1 Fall: $x \neq y$

(x/y) ✓ $\quad (y/x)$ ✗ $\Rightarrow$ Asymmetrie

$\Downarrow$

ANTISYM.

$\uparrow$

2. Fall $\quad x = y$

(x/y) ✓ $\quad (y/x)$ ✓ $=$ reflexiv

$x, y \in \mathbb{N}$