

$$1) (2i-5) \cdot [(3i+4) - 2 \cdot (i-4)]$$

$$(2i-5) \cdot [(3i+4) - 2i+8] \quad \left. \begin{array}{l} \text{assoziativ} \\ \text{kommutativ} \end{array} \right\}$$
$$[(3i-2i) + (4+8)]$$

$$(2i-5) \cdot (i+12)$$

$$-2 + 24i - 5i - 60 = -62 + 19i$$

$$\alpha = \arctan\left(-\frac{19}{62}\right) + \pi$$

$$2) \quad 4 \cdot (i-3)(3+i) - (i-2) \cdot (5+i)$$

$$4 \cdot (i-3) \cdot 4 - (5i - 1 - 10 - 2i)$$

$$16i - 48 - 3i + 11 = -37 + 13i$$

$$3) \quad 4 \cdot (4i-2 \cdot (-i)) \cdot [(-i+2i) \cdot (4i+1)]$$

$$4 \cdot (6i) \cdot (i) \cdot (4i+1)$$

$$-24 \cdot (4i+1) = -96i - 24$$

$$4) \quad -15i + 3i(-2i + 2) + 6i(2i + 5i - 3)$$

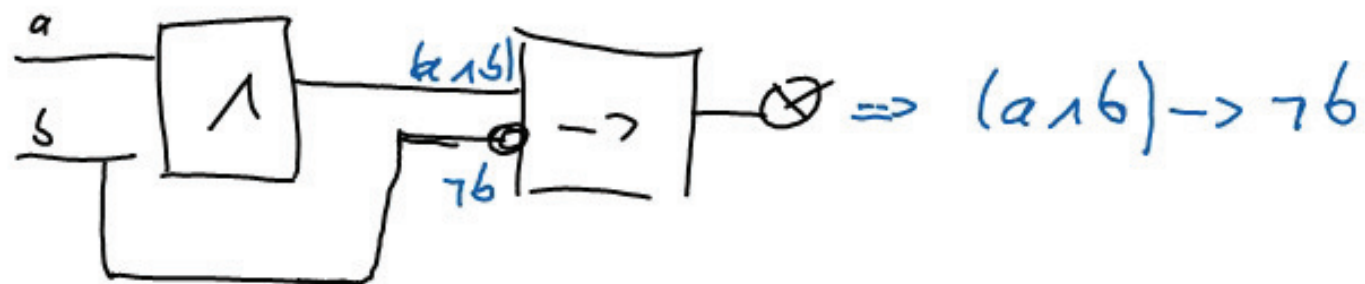
$$-15i - 6 - 6i - 42 - 18i = -48 - 39i$$

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

$$\frac{3i+4}{1-2i} \cdot \frac{1+2i}{1+2i} = \frac{3i-6+4+8i}{1^2-(2i)^2} = \frac{-2+11i}{5}$$

$$\frac{-5i-25 - (-4+22i) - (3i+19)}{10} = \frac{-30i-40}{10}$$

$$z = -4 - 3i$$



$a$	$w$	$w$	$F$	$F$
$b$	$w$	$\bar{w}$	$w$	$\bar{w}$
$a \wedge b$	$w$	$\bar{w}$	$\bar{w}$	$\bar{w}$
$\neg b$	$F$	$w$	$\bar{w}$	$w$
$a \wedge b \rightarrow \neg b$	$F$	$w$	$w$	$w$

$$E[A] = \{(w\bar{w}); (Fw); (F\bar{w})\}$$

$$a) \quad \overbrace{(p \rightarrow (q \vee r))}^{T_1} \wedge \overbrace{\neg(p \vee r)}^{T_2} \rightarrow \overline{T_3}$$

p	w	w	w	w	F	F	F	F
q	w	w	F	F	w	w	F	F
r	w	F	w	F	w	F	w	F
qvr	w	w	w	F	w	w	w	F
$T_1: p \rightarrow qvr$	w	w	w	F	w	w	w	w
$pvr$	w	w	w	w	w	F	w	F
$T_2: \neg(pvr)$	F	F	F	F	F	w	F	w
$\overline{T_1} \wedge \overline{T_2}$	F	F	F	F	F	w	F	v
$\overline{T_3}: \neg p$	F	F	F	F	w	w	w	w
$(\overline{T_1} \wedge \overline{T_2}) \rightarrow \overline{T_3}$	w	w	w	w	w	w	w	w

$E[A] = \text{Bool}^3$

$$\overline{T_1} \quad \overline{T_2}$$

$$\neg (p \leftrightarrow (q \vee r)) \vee (p \rightarrow r \wedge q)$$

p	w	w	w	w	F	F	F	F
q	w	w	F	F	w	w	F	F
r	w	F	w	F	w	F	w	F
(q ∨ r)	w	w	w	F	w	w	w	F
p ↔ (q ∨ r)	w	w	w	F	F	F	F	w
$T_1: \neg(\sim)$	F	F	F	w	w	w	w	F
r ∧ q	w	F	F	F	w	F	F	F
$\overline{T_2}$ p → r ∧ q	w	F	F	F	w	w	w	w
$T_1 \vee \overline{T_2}$	w	F	F	w	w	w	w	w

$$E[A] = \text{Bool}^3 \setminus \{ (wwF), (wFw) \}$$