1) od a)

```
 001101 | 13
 001100 | 12
 ------
 011001 | 25 ✓
```

od b)

```
 110001 | -15
 001001 | 9
 ------
 111010 | -6 ✓
```

2)

```
        0 0001 0010 | 18
        0 0010 1101 | 45
        ------------
        0 00 01 0010
      00 00000000
     000 010010
    0000 10010 0
   0
  0000 10 010 0
 0
 00
 000
 ------------------------
 011001010 10 | 810 ✓
```

4) $\left(\frac{4}{4}m + 1\frac{4}{4}\right) \cdot 3 = \frac{4}{4}m + 3\frac{4}{4}$

tehát $\frac{4m + 41}{3} = m + 3$ [illegible]

$4m + 41 = 3m + 9$

$m = 8$

[illegible] az [illegible] 8

5)

0 : 0000
1 : 0001
2 : 0010
3 : ~~1100~~ 0011
4 : 0101
5 : 1010
6 : 1100
7 : 1101
8 : 1110
9 : 1111

6)

0 : 0000
1 : 0010
2 : 0101
3 : 0100
4 : 0110
5 : 1001
6 : 1000
7 : 1010
8 : 1101
9 : 1100

Logické algebra

1) od a

a \ b	0	1
0	0	1
1	1	1

$a + \bar{a}b$

a \ b	0	1
0	0	1
1	1	1

$a + b$

$Z(a,b) = a + \bar{a}b$

i	a	b	Z
0	0	0	0
1	0	1	1
2	1	0	1
3	1	1	1

$Z(a,b) = a + b$

i	a	b	Z
0	0	0	0
1	0	1	1
2	1	0	1
3	1	1	1

$a + \bar{a}b = (a + \bar{a}) \cdot (a + b) = 1 \cdot (a + b) = a + b$

od b, a

a \ b	0	0
0	0	0
0	0	1

$a \cdot (\bar{a} + b)$

a \ b	0	0
0	0	0
0	0	1

ab

$Z(a,b) = a(\bar{a} + b)$

i	a	b	Z
0	0	0	0
1	0	1	0
2	1	0	0
3	1	1	1

$Z(a,b) = ab$

i	a	b	Z
0	0	0	0
1	0	1	0
2	1	0	0
3	1	1	1

$a \cdot (\bar{a} + b) = a\bar{a} + ab = 0 + ab = \underline{ab}$

2) $(x+y)(\bar{x}+y)(x+\bar{y})(\bar{x}+\bar{y}) = (x\bar{x} + xy + y\bar{x} + y) \cdot (x\bar{x} + x\bar{y} + \bar{x}\bar{y} + \bar{y}\bar{y}) = (xy + \bar{x}y + y)(x\bar{y} + \bar{x}\bar{y} + \bar{y}) = xyx\bar{y} + x\bar{x}y \ldots xy\bar{y} + \bar{x}xy + \bar{x}y\bar{y} + x\bar{y}y + \bar{x}\bar{y}y + y\bar{y} =$

$\underline{0 + 0 + 0 + 0 + 0 + 0 + 0 + 0 + 0}$

Rovnice ~~[illegible]~~ platí.

3)

0	1	1	1
0	1	X	X
0	1	X	0
X	X	X	0

(labels: d, c, b, a)

min disjunktivní:

$F(a,b,c,d) = b\bar{c}d + d\bar{b}\bar{a} + c\bar{b}\bar{a}$

~~$\Phi = \bar{a}bc + adc + a\bar{c}$~~

min konjunktivní:

$F(a,b,c,d) = acd + \bar{a}bd + \bar{a}\bar{c}d$

~~$\Phi(a,b,c,d) = \bar{a}bc + adc + a\bar{c}$~~

Logické funkce a kombinační obvody

1) $F_2 = (a+b)(\bar{c}+\bar{d})(\bar{a}+\bar{b}+\bar{c})$

F_2 NAND $= (\bar{a}\,\bar{b})(cd)(abc)$

2) $F_2 = \overline{(a+\bar{b}+d)} + \overline{(\bar{b}+c)} + \overline{(\bar{a}+c+\bar{d})}$