Svar till övningsuppgifter 1, Digitalteknik

Talsyster och koder

1 **a)** 20 **b)** 101 **c)** 273 **d)** 0,625 **e)** 0,4375 **f)** 0,15625

2 **a)** 26 **b)** 2572 **c)** 8383 **d)** 31 **e)** 124 **f)** 1073

3 **a)** 1010001 **b)** 10010110 **c)** 110010001

d) 1010000101 **e)** 11100111110 **f)** 1010000111000

5 **a)** 0.1010 **b)** 0.0101 **c)** 0.0100

7 **a)** 14 **b)** 65 **c)** 111 **d)** 0.A **e)** 0.7 **f)** 0.28

8 **a)** 24 **b)** 145 **c)** 421 **d)** 0.5 **e)** 0.34 **f)** 0.12

Grindar och kombinationskretsar

9.

a) $y_1 = ab + c$

$y_2 = ((ab)'c)'$

$y_3 = ((ab)'c')'$

$y_4 = ac + bc$

$y_5 = ((ac)'(bc)')'$

$y_6 = (a + b)c$

$y_7 = ((a + b)' + c)'$

$y_8 = ((a + b)' + c')'$

$y_9 = (a + c)(b + c)$

$y_{10} = ((a + c)' + (b + c)')'$

b)

abc	y_1	y_2	y_3	y_4	y_5	y_6	y_7	y_8	y_9	y_{10}
000	0	1	0	0	0	0	0	0	0	0
001	1	0	1	0	0	0	0	0	1	1
010	0	1	0	0	0	0	1	0	0	0
011	1	0	1	1	1	1	0	1	1	1
100	0	1	0	0	0	0	1	0	0	0
101	1	0	1	1	1	1	0	1	1	1
110	1	1	1	0	0	0	1	0	1	1
111	1	1	1	1	1	1	0	1	1	1

Boolesk algebra
10.

a) ad **b)** ad **c)** a **d)** ab´ + ac e) 1 **f)** a + b

g) ac **h)** a´d + bc´d´ **i)** ab **j)** c´ **k)** a´c + bc

l) ae + bc´e´ **m)** a´b + cd **n)** ab´c **o)** a + b **p)** a´

q) ac **r)** 1