Aufgabe 9:

$(42)_{10} \Rightarrow B=2$

$42:2=21 \quad R=0$
$21:2=10 \quad R=1$
$10:2=5 \quad R=0$
$5:2=2 \quad R=1$
$2:2=1 \quad R=0$
$1:2=0 \quad R=1$
$\Rightarrow (101010)_2$

$(42)_{10} \Rightarrow B=8$

$42:8=5 \quad R=2$
$5:8=0 \quad R=5$
$\Rightarrow (52)_8$

$(42)_{10} \Rightarrow B=16$

$42:16=2 \quad R=10$
$2:16=0 \quad R=2$
$\Rightarrow (2A)_{16}$

$(42)_{10} \Rightarrow B=3$

$42:3=14 \quad R=0$
$14:3=4 \quad R=2$
$4:3=1 \quad R=1$
$1:3=0 \quad R=1$
$\Rightarrow (1120)_3$

$(42)_{10} \Rightarrow B=5$

$42:5=8 \quad R=2$
$8:5=1 \quad R=3$
$1:5=0 \quad R=1$
$\Rightarrow (132)_5$

$(10101000)_2 \Rightarrow B=10$

$1\cdot 2^7+0\cdot 2^6+1\cdot 2^5+0\cdot 2^4+1\cdot 2^3+0\cdot 2^2+0\cdot 2^1+0\cdot 2^0=$

$=168$

$(168)_{10} \Rightarrow B=8$

$168:8=21 \quad R=0$
$21:8=2 \quad R=5$
$2:8=0 \quad R=2$
$\Rightarrow (250)_8$

$(168)_{10} \Rightarrow B=5$

$168:5=33 \quad R=3$
$33:5=6 \quad R=3$
$6:5=1 \quad R=1$
$1:5=0 \quad R=1$
$\Rightarrow (1133)_5$

$(168)_{10} \Rightarrow B=16$

$168:16=10 \quad R=8$
$10:16=0 \quad R=10$
$\Rightarrow (A8)_{16}$

$(168)_{10} \Rightarrow B=3$

$168:3=56 \quad R=0$
$56:3=18 \quad R=2$
$18:3=6 \quad R=0$
$6:3=2 \quad R=0$
$2:3=0 \quad R=2$
$=(20020)_3$

$(25)_8 \Rightarrow B=10$

$2 \cdot 8^1 + 5 \cdot 8^0 = 21$

$\Rightarrow (21)_{10}$

$(21)_{10} \Rightarrow B=2$

$21:2 = 10 \quad R=1$

$10:2 = 5 \quad R=0$

$5:2 = 2 \quad R=1$

$2:2 = 1 \quad R=0$

$1:2 = 0 \quad R=1$

$\Rightarrow (10101)_2$

$(21)_{10} \Rightarrow B=16$

$21:16 = 1 \quad R=5$

$1:16 = 0 \quad R=1$

$\Rightarrow (15)_{16}$

$(21)_{16} \Rightarrow B=5$

$21:5 = 4 \quad R=1$

$4:5 = 0 \quad R=4$

$\Rightarrow (41)_5$

$(21)_{10} \Rightarrow B=3$

$21:3 = 7 \quad R=0$

$7:3 = 2 \quad R=1$

$2:3 = 0 \quad R=2$

$\Rightarrow (210)_3$

$(0.A)_{16} \Rightarrow B=10$

$0 \cdot 16^0 + 10 \cdot 16^{-1} = 0{,}625$

$\Rightarrow (0.625)_{10}$

$(0.625)_{10} \Rightarrow B=2$

$0{,}625 \cdot 2 = 1{,}25$

$0{,}25 \cdot 2 = 0{,}5$

$0{,}5 \cdot 2 = 1$

$\Rightarrow (0.101)_2$

$(0.625)_{10} \Rightarrow B=8$

$0{,}625 \cdot 8 = 5$

$\Rightarrow (0.5)_8$

$(0.625)_{10} \Rightarrow B=3$

$0{,}625 \cdot 3 = 1{,}875$

$0{,}875 \cdot 3 = 2{,}625$

$0{,}625 \cdot 3 = 1{,}875$

$\Rightarrow (0.12\overline{12})_3$

$(0.625)_{10} \Rightarrow B=5$

$0625 \cdot 5 = 3{,}125$

$0{,}125 \cdot 5 = 0{,}625$

$0{,}625 \cdot 5 = 3{,}126$

$\Rightarrow (0.\overline{30})_5$

$(0.02)_3 \Rightarrow B=10$

$0 \cdot 3^0 + 0 \cdot 3^{-1} + 2 \cdot 3^{-2} = 0{,}\overline{22}$

$\Rightarrow (0.\overline{22})_{10}$

$(0.\overline{2})_{10} \Rightarrow B=5$

$0{,}\overline{2} \cdot 5 = 1{,}\overline{1}$

$0{,}\overline{1} \cdot 5 = 0{,}\overline{5}$

$0{,}\overline{5} \cdot 5 = 2{,}\overline{7}$

$0{,}\overline{7} \cdot 5 = 3{,}\overline{8}$

$0{,}\overline{8} \cdot 5 = 4{,}\overline{4}$

$0{,}\overline{4} \cdot 5 = 2{,}\overline{2}$

$(0.\overline{2})_{10} \Rightarrow B=2$

$0{,}\overline{22} \cdot 2 = 0{,}\overline{4}$

$0{,}\overline{4} \cdot 2 = 0{,}\overline{8}$

$0{,}\overline{8} \cdot 2 = 1{,}\overline{7}$

$0{,}\overline{7} \cdot 2 = 1{,}\overline{5}$

$0{,}\overline{5} \cdot 2 = 1{,}\overline{1}$

$0{,}\overline{1} \cdot 2 = 0{,}\overline{2}$

$\Rightarrow (0.\overline{001110})_2$

$(0.\overline{2})_{10} \Rightarrow B=8$

$0{,}\overline{2} \cdot 8 = 1{,}\overline{7}$

$0{,}\overline{7} \cdot 8 = 6{,}\overline{2}$

$\Rightarrow (0.\overline{16})_8$

$(0.\overline{2})_{10} \Rightarrow B=16$

$0{,}\overline{2} \cdot 16 = 3{,}\overline{5}$

$0{,}\overline{5} \cdot 16 = 8{,}\overline{8}$

$0{,}\overline{8} \cdot 16 = 14{,}\overline{8}$

$\Rightarrow (0.38E)_{16}$

$(0.3)_5 \Rightarrow B = 10$

$0.5^0 + 3 \cdot 5^{-1} = (0,6)_{10}$

$(0.6)_{10} \Rightarrow B = 2$

$0,6 \cdot 2 = 1,2$

$0,2 \cdot 2 = 0,4$

$0,4 \cdot 2 = 0,8$

$0,8 \cdot 2 = 1,6$

$0,6 \cdot 2$

$\Rightarrow (0.\overline{1001})_2$

$(0.6)_{10} \Rightarrow B = 8$

$0,6 \cdot 8 = 4,8$

$0,8 \cdot 8 = 6,4$

$0,4 \cdot 8 = 3,2$

$0,2 \cdot 8 = 1,6$

$\Rightarrow (0.\overline{4631})_8$

$(0.6)_{10} \Rightarrow B = 16$

$0,6 \cdot 16 = 9,6$

$0,6 \cdot 16 = 9,6$

$\Rightarrow (0.\overline{99})_{16}$

$(0.6)_{10} \Rightarrow B = 3$

$0,6 \cdot 3 = 1,8$

$0,8 \cdot 3 = 2,4$

$0,4 \cdot 3 = 1,2$

$0,2 \cdot 3 = 0,6$

$\Rightarrow (0.\overline{1210})_3$

$B = 10$	$B = 2$	$B = 8$	$B = 16$	$B = 3$	$B = 5$
$(42)_{10}$	$(101010)_2$	$(52)_8$	$(2A)_{16}$	$(1120)_3$	$(132)_5$
$(168)_{10}$	$(10101000)_2$	$(250)_8$	$(A8)_{16}$	$(20020)_5$	$(1133)_5$
$(21)_{10}$	$(10101)_2$	$(25)_8$	$(15)_{16}$	$(210)_3$	$(41)_5$
$(0.625)_{10}$	$(0.101)_2$	$(0.5)_8$	$(0.A)_{16}$	$(0.\overline{12})_3$	$(0.\overline{30})_5$
$(0.\overline{2})_{10}$	$(0.\overline{001110})_2$	$(0.\overline{16})_8$	$(0.\overline{38E})_{16}$	$(0.02)_3$	$(0.\overline{102342})_5$
$(0.6)_{10}$	$(0.\overline{1001})_2$	$(0.\overline{4631})_8$	$(0.\overline{9})_{16}$	$(0.\overline{1210})_3$	$(0.3)_5$

Aufgabe 10

a)

1. $(32.5)_8 + (4.73)_8 =$

$$\Rightarrow \begin{array}{r} 4,73 \\ +\ 32,50 \\ \hline 3743 \end{array} = (37.43)_8$$

2. $(11101)_2 + (101111)_2 =$

$$= \begin{array}{r} 11101 \\ 101111 \\ \hline (1001100)_2 \end{array} = (1001100)_2$$

3. $(1FC.D)_{16} + (A13.4)_{16} =$

$$= \begin{array}{r} 1FC,D \\ +\ A13,4 \\ \hline C10,1 \end{array} = (C10.1)_{16}$$

A = 10
B = 11
C = 12
D = 13
E = 14
F = 15