Optimierung Blatt 10 zum 06.01.2014

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1. s(-, ∞)
 a(s, +, 3)
 b(s, +, 5)
 c(s, +, 6)
 t(a, +, 3)

`s a t:` $d = 3$

 s(-, ∞)
 b(s, +, 5)
 c(s, +, 6)
 d(b, +, 5)
 e(b, +, 2)
 t(d, +, 5)

`s b d t:` $d = 5$

 s(-, ∞)
 c(s, +, 6)
 d(c, +, 4)
 b(d, -, 4)
 e(b, +, 2)
 t(e, +, 2)

`s c d b e t:` $d = 2$

 s(-, ∞)
 c(s, +, 4)
 d(c, +, 2)
 b(d, -, 2)

`terminiert, Flusssumme: 10`

2.   a) maximize p=-67w -120k - 100 h - 60f - 97b -124n -22s -62m subject to
8w +25k +30h + 22f + 3b+ 8n + 6s + 0m >= 75,
1w +35k + 8h + 1f + 0b+33n +13s +98m >= 90,
54k+ 0k + 0h + 0f +42b+ 4n +63s + 0m >= 300,
w>=0, k>=0, h>=0, f>=0, b>=0, n>=0, s>=0, m>=0

b) Optimal Solution: p = -6801/28; w = 0, k = 0, h = 0, f = 87/56,
b = 0, n = 0, s = 381/56, m = 0

c) minimize p=3a + 24b + 13c + 9d + 20e + 19f subject to
110a+205b+160c+160d+420e+260f>=2000,
4a+32b+13c+8d+4e+14f>=55,
2a+12b+54c+285d+22e+80f>=800,
a>=0,b>=0,c>=0,d>=0,e>=0,f>=0,
a<=4,b<=3,c<=2,d<=8,e<=2,f<=2

Optimal Solution: p = 185/2; a = 4, b = 0, c = 0, d = 9/2,
e = 2, f = 0

d) maximize p=5a+13b+8c+9d+15e+12f+5g+14h+10i subject to
a+b+c=400,
d+e+f=480,
g+h+i=230,
b+e+h<=420,
c+f+i<=250,
a>=0,b>=0,c>=0,d>=0,e>=0,f>=0,g>=0,h>=0,i>=0

Optimal Solution: p = 12020; a = 0, b = 400, c = 0, d = 440,
e = 0, f = 40, g = 0, h = 20, i = 210