17. dec. 2009

TASK 1

Demand $P = -\frac{1}{25000}X + 20$

Turnover $pX = -\frac{1}{25000}X^2 + 20X$

$MR = -\frac{2}{25000}X + 20$

$FC = 250{,}000$

$VC = \frac{5}{250{,}000}X^2 + 5X$

$TC = \frac{5}{250000}X^2 + 5X + 250{,}000$

$MC = \frac{10}{250{,}000}X + 5$

or/eller

$MC = \frac{1}{25000}X + 5$

$MR = MC$

$-\frac{2}{25000}X + 20 = \frac{1}{25000}X + 5$

$15 = \frac{3}{25000}X$

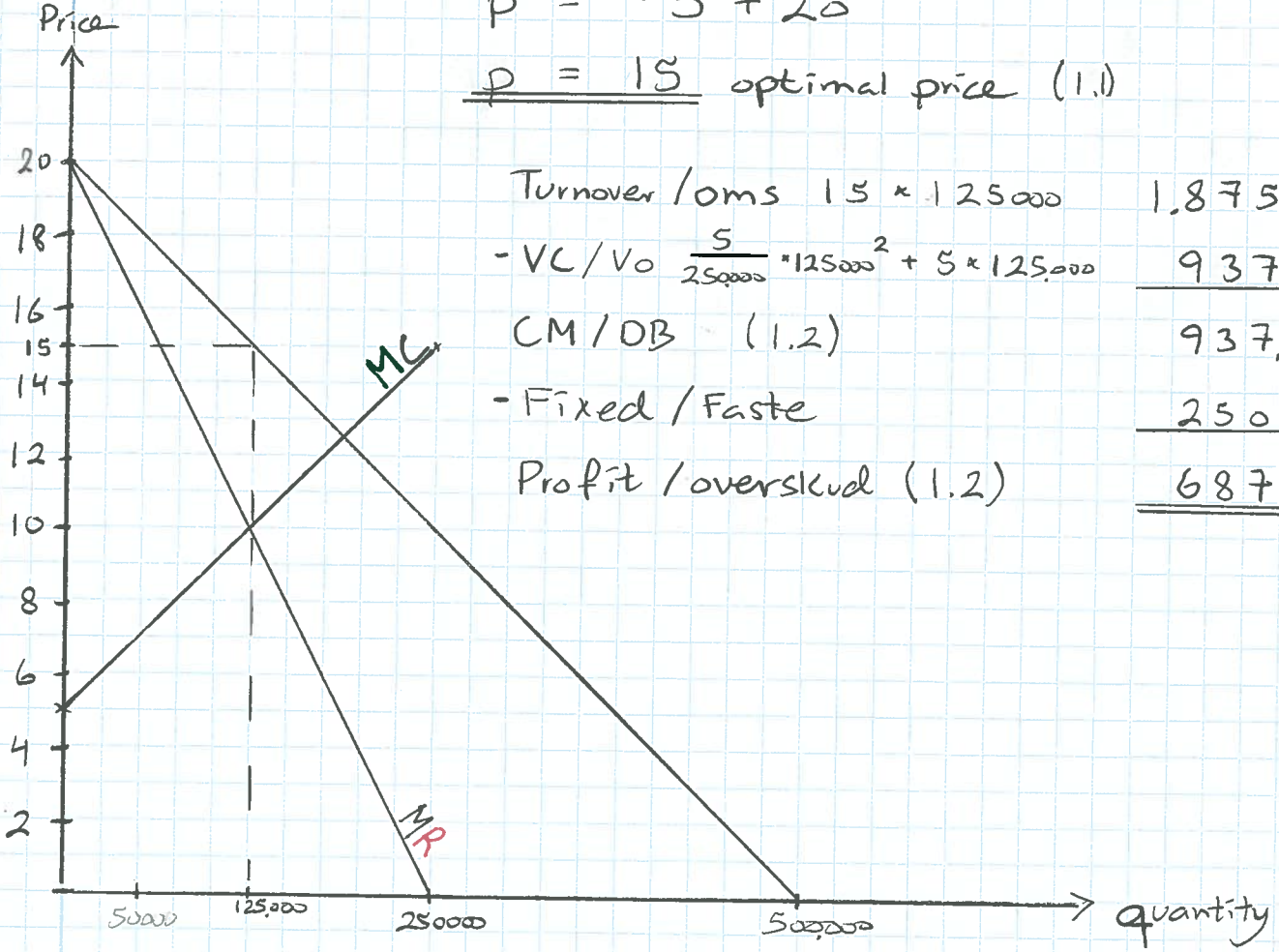
$375000 = 3X$

$\underline{125{,}000 = X}$ optimal quantity (1.1)

$P = -\frac{1}{25000} * 125000 + 20$

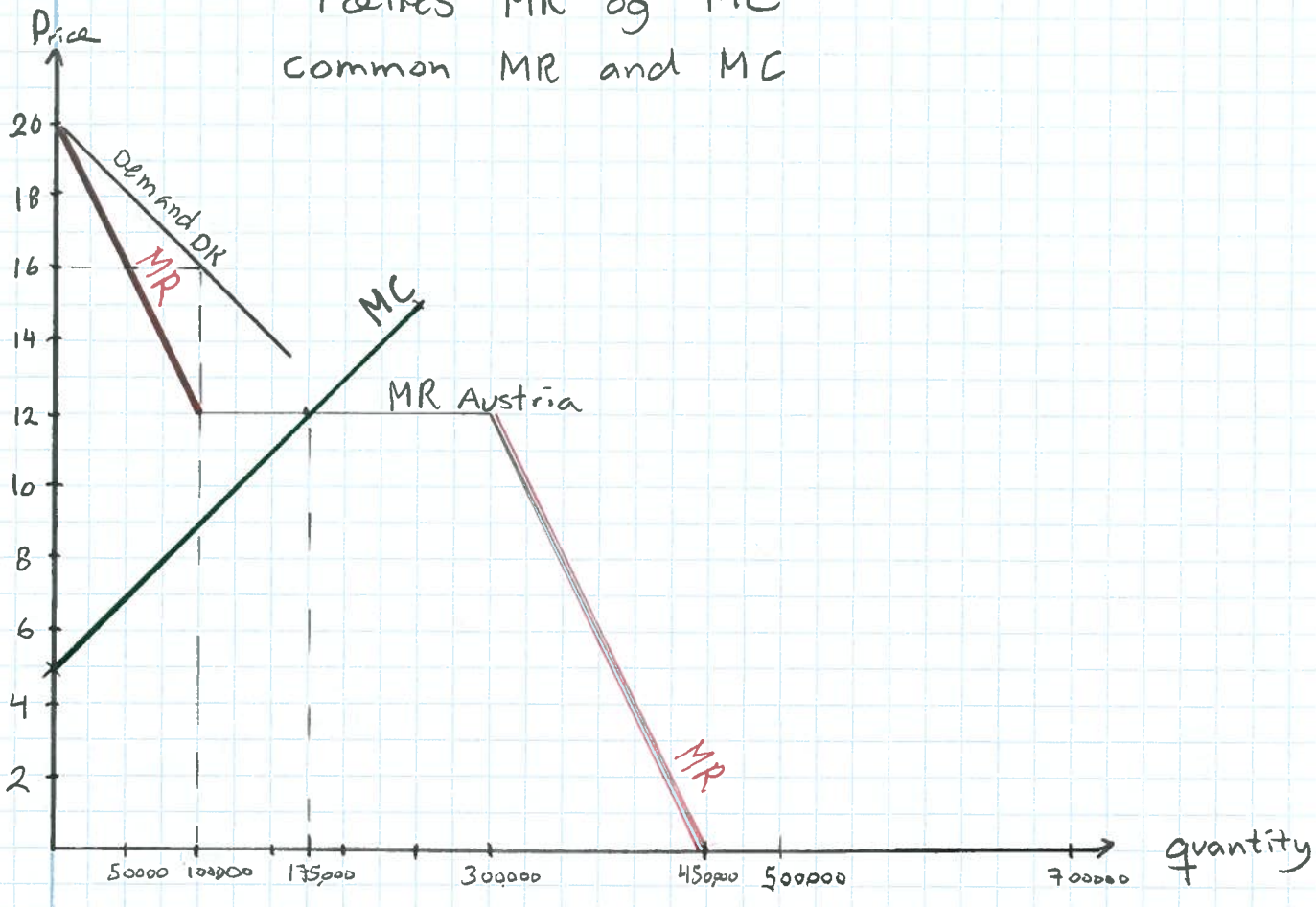
$P = -5 + 20$

$\underline{P = 15}$ optimal price (1.1)



Turnover/oms $15 * 125000$	1,875,000
- VC/Vo $\frac{5}{250000} * 125000^2 + 5 * 125{,}000$	937,500
CM/DB (1.2)	937,500
- Fixed/Faste	250,000
Profit/overskud (1.2)	687500

Fælles MR og MC
common MR and MC



$$MR = MC$$

$$12 = \frac{1}{25000}X + 5$$

$$7 = \frac{1}{25.000}X$$

$$\underline{175.000 = X} \quad \text{Total quantity}$$

$$MR_{DK} = MR_{Austria}$$

$$-\frac{2}{25000}X + 20 = 12$$

$$8 = \frac{2}{25000}X$$

$$\underline{100000 = X} \quad \text{quantity DK} \Rightarrow \text{quantity Austria} = \underline{75.000}$$

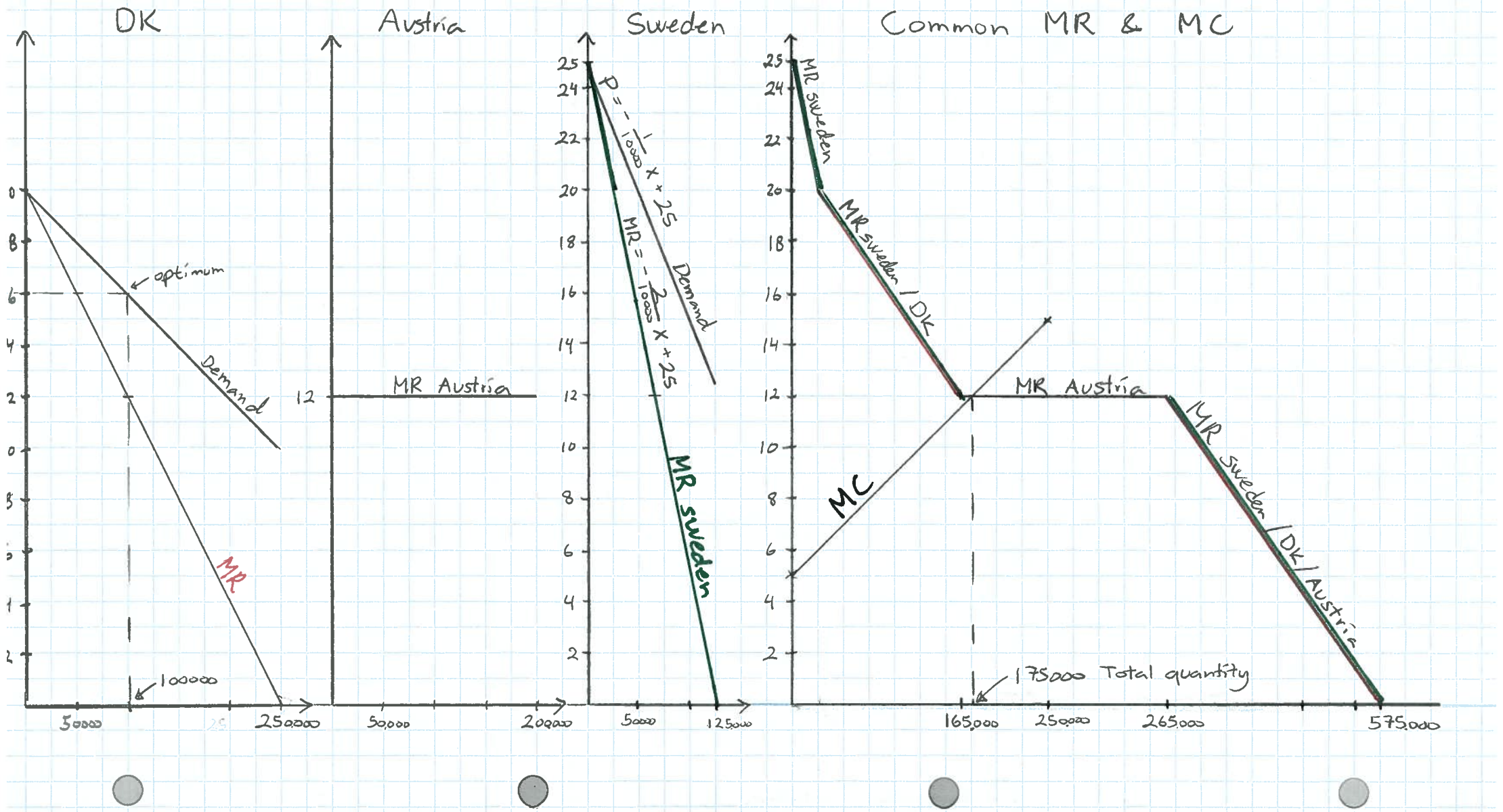
$$Price_{DK} = -\frac{1}{25000} * 100000 + 20$$

$$Price_{DK} = -4 + 20$$

$$\underline{Price_{DK} = 16}$$

1.3 Profit statement / Resultatopgørelse

	Price	quantity		
Turnover OK	16 ×	100.000	=	1.600.000
Turnover Austria	12 ×	75000	=	906.000
- VC / VO	$\frac{5}{250.000} \times 175000^2$ (612.500)	+ 5×175.000 (875.000)	=	1.487.500
CM / DB				1.012.500
- Fixed / Faste				250.000
1.3 Profit / overskud				762.500


DK
Austria
Sweden
Common MR & MC
optimum
Demand
MR
100000
5000
250000
MR Austria
12
50,000
200000
P = - 1/1000 X + 25
MR = - 2/1000 X + 25
Demand
MR sweden
5000
125000
MR sweden
MR sweden / DK
MR Austria
MR sweden / DK / Austria
MC
175000 Total quantity
165,000
250000
265000
575,000

$$MR_{Austria} = MC$$

$$12 = \frac{1}{25000}X + 5$$

$$175.000 = X \quad \text{Total quantity}$$

$$P_{Level} = 12$$

$$MR_{sweden} = 12$$

$$-\frac{2}{10000}X + 25 = 12$$

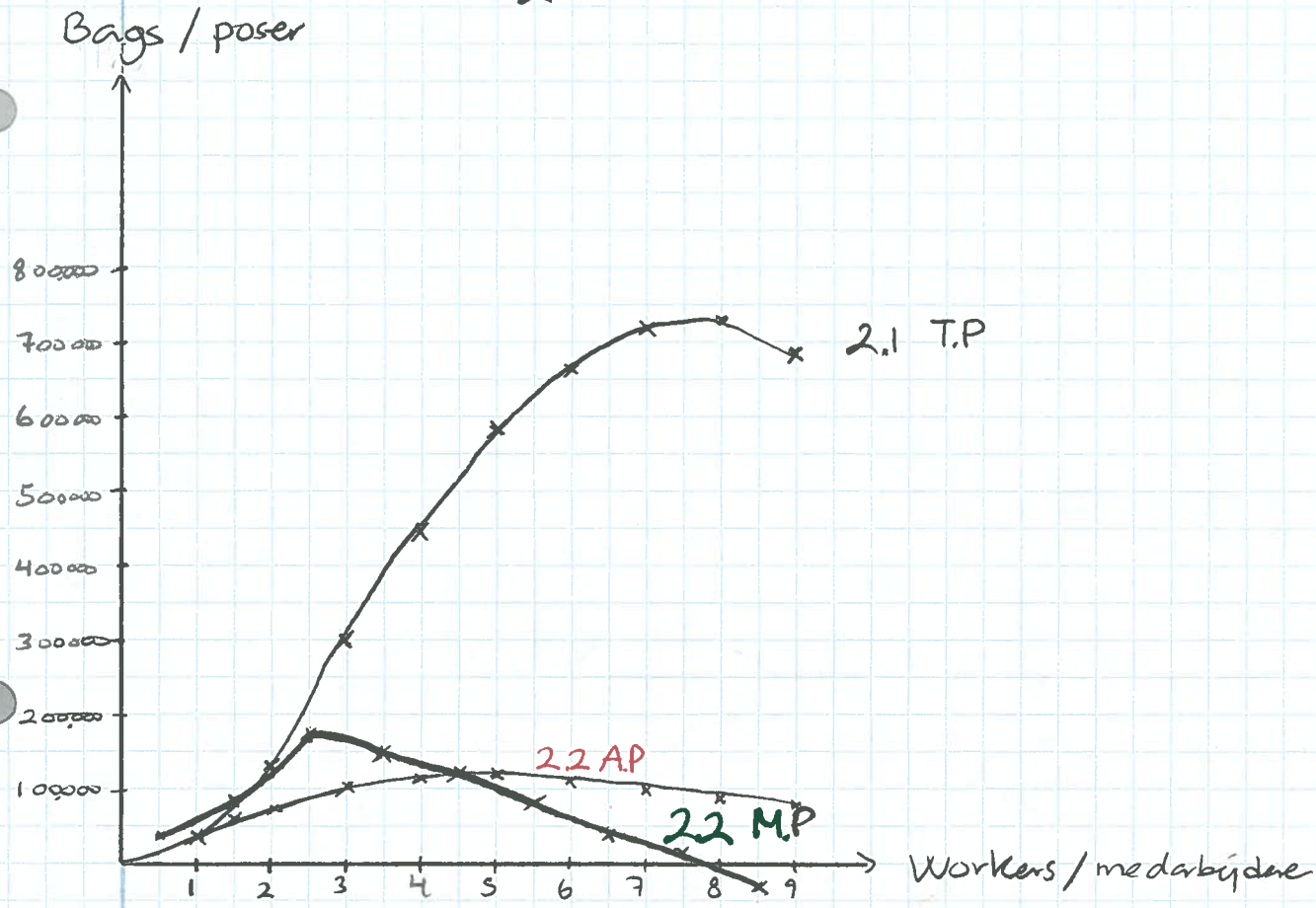
$$13 = \frac{2}{10000}X$$

$$65000 = X \Rightarrow p = -\frac{1}{10.000} \cdot 65000 + 25 \Rightarrow p = 18,5$$

1.4	Turnover DK	$16 \cdot 100000$	$= 1.600.000$
1.4	Turnover SW	$18,5 \cdot 65000$	$1.202.500$
1.4	Turnover Austria	$12 \cdot 10000$	120.000
	Turnover Total		$2.922.500$
	- VC / Vo		$1.487.500$
	CM / DB		$1.435.000$
	- Fixed / Faste		250.000
1.4	Profit / overskud		$1.185.000$

1.5 Er det muligt at have forskellige priser i DK, Sverige og Østrig

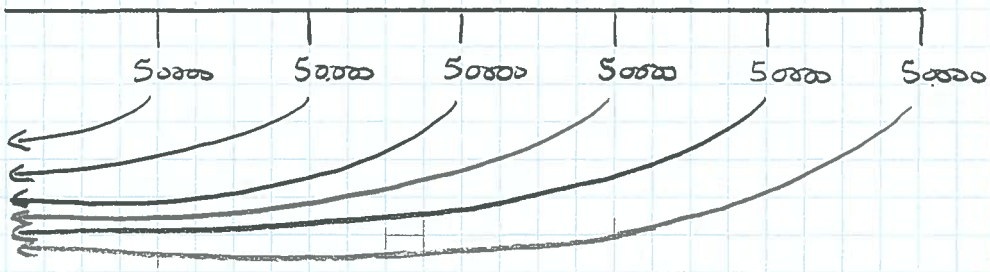
TASK 2



Workers	2.1 T.P Total Product	2.2 A.P Average Product	2.2 M.P Marginal Product
			> 35000
1	35000	35000	
			> 95.000
2	130.000	65000	
			> 170.000
3	300.000	100.000	
			> 150000
4	450.000	112500	
			> 130.000
5	580.000	116000	
			> 85.000
6	665.000	110833	
			> 45.000
7	710.000	101.429	
			> 15000
8	725.000	90.625	
			> -35.000
9	690.000	76.667	

2.3 Hvad lønnen er pr. medarbejder og hvad vi tjener per pakket pose

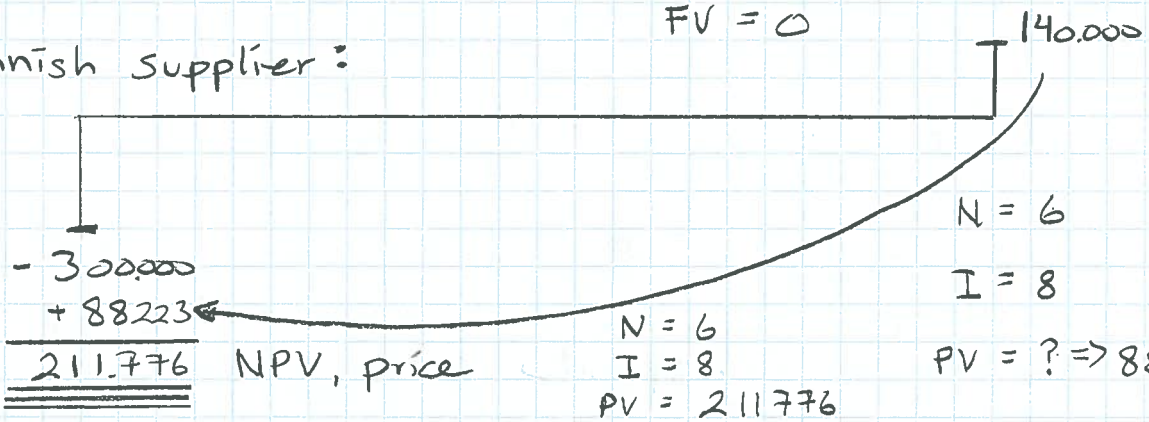
Italian supplier:



231.144 NPV, price

N = 6
I = 8
PV = ? ⇒ 231.144
PMT = 50.000
FV = 0

Finnish supplier:



211.776 NPV, price

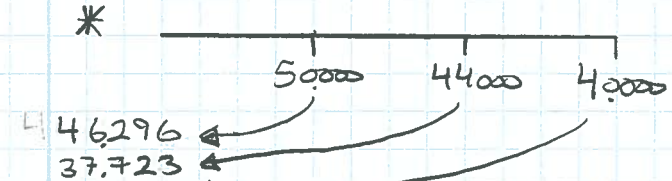
N = 6
I = 8
PV = 211776
PMT = ? ⇒ -45810
FV = 0

N = 6
I = 8
PV = ? ⇒ 88.223
PMT = 0
FV = -140.000

3.1 The Finnish oven should be acquired

		PMT	PMT new oven	
Old oven	1 Year	50.000	45.810	No
old oven	2 Years	47.115	45810	No
old oven	3 Years	44.923 *	45810	Yes
old oven	4 Years	47.333	45810	No

3.2 optimale udskiftningspunkt er år 3
optimal replacement time is year 3



46.296
37.723
31753
115.772 NPV

N = 3
I = 8
PV = -115.772
PMT = ? ⇒ 44.923
FV = 0

	FLOWER	MODERN	CLASSIC	TOTAL	Price per cost-driver
Direct Raw material	50000	100000	250000	400000	$\frac{20000}{400.000} = 0,05$
Kilowatt hows	25000	100000	75000	200.000	$\frac{32.000}{200.000} = 0,16$
set up	12	5	3	20	$\frac{40.000}{20} = 2.000$
Indirect costs:				Total	
Handling of raw materials	0,05 × 50.000 = 2,500	0,05 × 100.000 = 5,000	0,05 × 250 000 = 12,500	20,000	
Energy	0,16 × 25.000 = 4,000	0,16 × 100 000 = 16,000	0,16 × 75.000 = 12000	32,000	
Production monitoring	12 × 2000 = 24000	5 × 2000 = 10,000	3 × 2000 = 6000	40000	
Total Indirect costs	30,500	31,000	30,500	92,000	

TASK 4