

Accounting Department

Management Accounting II

EXERCISE BOOK 3
(Solutions)

Standard (BUDGETED) CONTROL
Exercises 9 to 12

Management – 2nd Year

School Year 2015/2016

EXERCISE 9 – SOLUTION

FORTE COMPANY

Table of the production costs

Description	MU	Unit Cost (€)	BETA1 – 550 t		Product BETA - 40	
			Q	€	Q	€
1 DM						
M1	ton	40	440	17 600		-
M2	ton	25	330	8 250		-
Intermediate product BETA1	ton	122.5		-	360	44 100
Total 1				25 850		44 100
2 Conv. Cost						
A1	Lh	16	2475	39 600		-
A2	Mh	28			1 120	31 360
Total 2				39 600		31 360
3 By-product BETA2	unit	650		-	4	(2 600)
4 MCFP				65 450		72 860
5 Unit MCFP				119		1 821.5

Manufacturing variance of BETA1 = 550 ton (119-122.5) = – 1 925 € (Fav)

Manufacturing variance of BETA = 40 units (1 821.5 – 2 000) = - 7 140 € (Fav)

Total manufacturing variance = - 1 915 – 7 140 = - 9 065€ (Fav)

Table of the conversion (sections) costs

Description	MU	A1- 2 475	A2 – 1 120	S3- 300	S4
1 DC					
Variable costs	€	21 037.5	11 760.0	1 050	-
Fixed costs	€	16 230.0	18 802.5	750	1 250
Sub Total		37 267.5	30 562.5	1 800	1 250
2 Reallocations					
S3	€	742.5	757.5		
S4	€	600	600		-
3 Conv. costs		38 610	31 920	1 800	1 250
4 WU		15.6	28.5	6.0	-
Variances		-990	+560	+300	+50

Total sections variance = - 80 (Fav)

Purchases variance:

M1 = 500 tons (42-40) =1 000 € (Unf)

M2 = 350 tons (25-25) =0 €

NPMC = -9 065 – 80 + 1 000 = - 8 145 €

The monthly profit & loss statement

Description	BETA	BETA1	BETA2	TOTAL
Sales	82 500	34 200	2 600	119 300
Sales cost	60 000	23 275	2 600	85 875
Subtotal	22 500	10 925	0	33 425
NPMC				- 8 145
Gross Profit				41 570
Selling (distribution) expenses				
Variable	2 062.5	522.5		2 585
Fixed				4 500
Operational Profit				34 485

Question 2

Manufacturing variance of BETA1 = 550 tons $(119 - 122.5) = -1\,925\text{ €}$

Productivity variance:

M1 = 550 tons $\times 40 \times (440/550 - 0.75) = 550\text{ tons} \times 40 \times (0.8 - 0.75) = 1\,100\text{ €}$

M2 = 550 tons $\times 25 \times (330/550 - 0.5) = 550\text{ tons} \times 25 \times (0.6 - 0.5) = 1\,375\text{ €}$

Efficiency variance:

A1 = 550 tons $\times 16 \times (2\,475/550 - 5) = 550\text{ tons} \times 16 \times (4.5 - 5) = -4\,400\text{ €}$

Total variance = $1\,100 + 1\,375 - 4\,400 = -1\,925\text{ €}$

Question 3

Variance of the section A1 = 2 475 Lh $(15.6 - 16) = -990\text{ €}$

Total variance = Standard (budget) variance + Activity variance

Standard (budget) variance = Actual Expenses* – Flexible Standard (budget) expenses

Actual Expenses* = 2 475 Lh $\times 15.6 = 38\,610\text{ €}$

Flexible standard (budget) expenses (FSE) = 2 475 Lh $\times (270\,000 + 7\,500) / 30\,000\text{ Lh} + (195\,300 + 7\,200) / 12 = 2\,475\text{ Lh} \times 9.25 + 16\,900 = 22\,893.75 + 16\,875 = 39\,768.5\text{ €}$

Standard (budget) variance = $38\,610\text{ €} - 39\,768.5\text{ €} = -1\,158.5\text{ €}$

Activity variance = Flexible standard (budget) expenses (FSE) – Allocated expenses = $39\,768.5\text{ €} - 39\,600\text{ €} = 168.5\text{ € (Unfav.)}$

Allocated expenses = $2\,475 \times 16.0 = 39\,600\text{ €}$

Total variance = $-1\,158.5\text{ €} + 168.5\text{ €} = -990\text{ €}$

Or Activity variance = Average fixed costs (Fixed Costs/Budgeted Activity) x (Budgeted Activity/12 – Actual Activity) = $(195\,300 + 7\,200) / 30\,000 \text{ Lh} \times (+30\,000/12 - 2\,475) = 6.75 \times (2\,500 - 2\,475) = 168.75 \text{ € (Unfav.)}$

Question 4

Description	Monthly P&L Stat	Flexible P&L Stat	Budgeted P&L Stat	Total Variance	Prices Variance	Quantity Variance
Sales	82 500 (1)	75 000 (2)	62 500 (3)	20 000 (4)	7 500(5)	12 500(6)
MCPS	60 000(7)	60 000(8)	50 000(9)	10 000	0(10)	10 000(11)
Subtotal	22 500	15 000	12 5000			
Gross Profit						
Sell.(distrib.) expens.						
Variable	2 062.5(12)	1 500(13)	1 250(14)	812.5	562.5(15)	250(16)
Fixed	4 500	4 500	5 000	-500	0	-500
Operational Profit						

(1) $30 \times 2\,750$

(2) $30 \times 2\,500$

(3) $25 \times 2\,500$

(4) (1) – (3)

(5) $30 \times (2\,750 - 2\,500)$

(6) $2\,500 (30-25)$

(7) $30 \times 2\,000$

(8) $30 \times 2\,000$

(9) $25 \times 2\,000$

(10) $30 \times (2\,000 - 2\,000)$

(11) $2\,000 (30 - 25)$

(12) $2\,750 \times 2.5\% \times 30$

(13) $2\,500 \times 2.0\% \times 30$

(14) $2\,500 \times 2.0\% \times 25$

(15) $30 \times (2\,750 \times 2.5\% - 2\,500 \times 2\%)$

(16) $2\,500 \times 2\% (30-25)$

EXERCISE 10 – SOLUTION KULE COMPANY

1. Total Variance of the Section 2

$$TV = AA \times (AWU - SWU) = 190 \times ((22\,000 + 12\,000) + 40 \times 100) / 190 - 180 = 190 \times (200 - 180) = 3\,800 \text{ € (Unfav)}$$

2. Analysis of the Total Variance of the Section 2, calculating the Budget Variance and the Activity Variance

$$\text{Flexible Standard (Budget) Expenses (FSE)} = AA \times ((\text{Var Budgeted/Budg Act}) + \text{Fixed Budgeted}) = 190 \times (12\,000 + 40 \times 100) / 200 + 20\,000 = 15\,200 + 20\,000 = 35\,200 \text{ €}$$

a) Standard (Budget) Variance = Actual Expenses* - FSE = (34\,000 + 4\,000) - 35\,200 = 2\,800 € (Unfav)

b) Activity Variance = FSE - Allocated Expenses = 35\,200 - 34\,200 = 1\,000 € (Unfav)

$$TV = a) + b) = 3\,800 \text{ € (Unfav)}$$

3. Justification of the Activity Variance using the concept of fixed costs

$$\text{Act. Var.} = \text{Standard Average Fixed Cost} \times (\text{Standard Activ.} - \text{Actual Activity}) = 20\,000 / 200 \times (200 - 190) = 1\,000 \text{ € (Unfav)}$$

4. Calculation and analysis of the Budget Variance of Fuels in Section 2

$$\text{Standard (Budget) Variance} = \text{Actual Expenses} - \text{FSE}$$

For the Fuels of Section 2:

$$\text{Standard (Budget) Variance} = (4\,750 \times 1.35) - 12\,000 \times 0.6 / 200 \times 190 = 6\,412.5 - 6\,840 = -427.5$$

$$\text{Flexible Budget of the Fuels} = \text{Actual Quantity} \times \text{Standard Price} = 4\,750 \times 1.5 = 7\,125$$

$$\text{Prices Variance} = \text{Actual Expenses} - \text{Flexible Budget} = 6\,412.5 - 7\,125 = -712.5 = \text{Actual Quant. (Actual Price - Stand Price)} = 4\,750 \times (1.35 - 1.5)$$

$$\text{Quantities Variance} = \text{Flexible Budget} - \text{FSE} = 7\,125 - 6\,840 = 285 = \text{Stand. Price} \times (\text{Actual Quant.} - \text{Flexible Quant.}) = 1.5 \times (4\,750 - (7\,200 / 1.5 / 200 \times 190)) = 1.5 \times (4\,750 - 4\,560)$$

EXERCISE 11 – SOLUTION
KAPA COMPANY

Table of the conversion (sections) costs

	K 1 160 Lh	P 2 550 Mh	A 3 750 Kwh	A1	RMW
1.Direct Costs					
Variable	3 190	13 260	8 250	-	-
Fixed	1 900	5 890	3 750	3 500	3 120
2. Reallocations					
A	4 350	6 900	-		
A1	1 000	2 000	-		
3.Total Cost	10 440	28 050	12 000	3 500	3 120
Work U.	9	11	3.2	-	-
Allocation U.	-	-	-	-	4.8

Reallocation of A to K = $1\,450 \times 3$

Reallocation of A1 to K = $12\,000/12$

Reallocation of A to P = $2\,300 \times 3$

Reallocation of A1 to P = $24\,000/12$

AU RMW = $3\,120 / (300+350)$

Table of the production costs

Description	MU	Unit Cost	ALFA – 200 tons		BETA – 300 tons	
			Q	€	Q	€
1. Materials						
M	ton	15*	300	4 500	-	-
N	ton	17*	-	-	405	6 885
Total (1)				4 500		6 885
2. Conversion Costs						
K	Hh	10	1160	11 600	-	-
P	Hm	12	-	-	2 550	30 600
Total (2)				11 600		30 600
3. MCFP				16 100		37 485
4. Unit MCFP				80.5		124.95

- Standard AU RMW = $40\,000/8\,000 = 5$ €/ton
- Purchase cost of M = $10 + 5 = 15$ €/ton
- Purchase cost of N = $12 + 5 = 17$ €/ton

Profit & Loss Statement

Description	ALFA	BETA	Total
SALES	13 500	37 500	51 000
MCPS	12 600	29 525	42 125
Subtotal	900	7 975	8 875
NPMC			(1 260)
Gross Profit			10 135

Standard Unit MCFP (ALFA) = $(1.6 \times 2\,000 \times 15 + 120\,000) / 2\,000 \text{ tons} = 84 \text{ €/ton}$

Standard Unit MCFP (BETA) = $(1.3 \times 3\,000 \times 17 + 288\,000) / 3\,000 \text{ tons} = 118.1 \text{ €/ton}$

MCPS (ALFA): $150 \times 84 = 12\,600 \text{ €}$

MCPS (BETA): $250 \times 118.1 = 29\,525 \text{ €}$

MCPS (S): $30 \times 10 = 300 \text{ €}$

Accounting variances:

Purchases:

A: 300 tons $(10.5 - 10) = +150 \text{ (Unf)}$

B: 350 tons $(11.5 - 12) = -175 \text{ (Fav)}$ -25 (Fav)

Sections:

K: 1 160 Lh $(9 - 10) = -1\,160 \text{ (Fav)}$

P: 2 550 Mh $(11 - 12) = -2\,550 \text{ (Fav)}$

A: 3 750 Kwh $(3.2 - 3) = +750 \text{ (Unf)}$

A1: $3\,500 - 3\,000 = +500 \text{ (Unf)}$

RMW: 650 $(4.8 - 5) = -130 \text{ (F)}$ -2 590 (Fav)

Manufacturing:

ALFA: 200 tons $(80.5 - 84) = -700 \text{ (Fav)}$

BETA: 300 tons $(124.95 - 118.1) = +2\,055 \text{ (Unf)}$ +1 355 (Unf)

Total accounting variances = NPMC = $-25 - 2\,590 + 1\,355 = -1\,260 \text{ €}$

Analysis of the manufacturing variance – product ALFA

Income variance:

Material M: $200 \text{ tons} \times 15 \times (1.5 - 1.6) = -300\text{€}$ (Fav)

Efficiency variance:

Section K: $200 \times 10 \times (1\,160/200 - 12\,000/2\,000) = 200 \times 10 \times (5.8 - 6) = -400\text{€}$ (Fav)

Total = $-300 - 400 = -700$ (Fav)

Analysis of the section A variance

The section total variance = $3\,750 \text{ Kwh} (3.2 - 3) = 750\text{€}$ (Unf)

Total Variance = Standard (budget) variance + Activity variance = $1\,000 - 250 = 750 \text{ €}$

Stand. (budget) var. = Actual Expenses* - FSE = $12\,000 - 11\,000 = 1\,000$

Activity var. = FSE – Allocated Expenses = $11\,000 - 11\,250 = -250 \text{ €}$

FSE = $3\,750 \times 84\,000/42\,000 + 42\,000/12 = 3\,750 \times 2 + 3\,500 = 11\,000 \text{ €}$

Actual Expenses* = $3\,750 \times 3.2 = 12\,000 \text{ €}$

Allocated Expenses = $3\,750 \times 3 = 11\,250 \text{ €}$

Activity variance = $42\,000\text{€}/42\,000 \text{ kwh} \times (42\,000/12 - 3\,750) = 1 \times (3\,500 - 3\,750) = -250 \text{ €}$

Non-accounting variances

Sales variance of BETA

Sales total variance = 250 tons x 150 € - 3 000x0.6/6 x 135 € = 37 500 – 40 500 =
– 3 000 € (Unf)

Quantities variance = 135€ (250 – 300) = - 6 750 (Unf)

Prices variance = 250 tons (150 – 135) = + 3 750 (Fav)

Cost variance of the sales of BETA = 118.1 (250-300) = -5 905 €

Variance of the variable selling (distribution) costs of BETA

Total variance = 250 tons x 150 x 0.025 – 3 000x0.6/6 x 135 x 0.02= 937.5 – 810 = +
127.5 €

Quantities variances = 135 x 0.02x (250 – 300) = - 135 € (Fav)

Price variance = 250 tons (3.75 – 2.7) = +262,5 € (Unf)

