

Question 8

	€	€	€ per unit
Sales (90,000 units)		1,170,000	13.00
Less Variable Costs			
Direct materials	390,000		
Direct wages	236,000		
Factory overhead (40%)	[1] 32,800		
Sales commission (5% of sales)	[1] 58,500	(717,300)	(7.97)
Contribution		452,700	5.03
Less Fixed Costs			
Factory overhead (60%)	49,200		
Selling expenses (excl Commission)	[1] 46,500		
Administration expenses	130,000	(225,700)	
Net Profit		<u>227,000</u>	

(a) **Break even point** $\frac{\text{Fixed Costs}}{\text{CPU}} = \frac{225,700 [1]}{5.03 [1]} = [4] 4,871 \text{ units}$

Margin of safety Budgeted Sales – Break even point
 90,000 [2] – 44,871 [1] = [2] 45,129 units

(b) **Number of Units to increase profits by 20%**

Net profit 2010	227,000
Increase in net profit 20%	45,400
Net profit for 2011	<u>272,400</u>

$\frac{\text{Fixed Costs} + \text{Target Profit}}{\text{CPU}} = [2] \frac{225,700 + 272,400 [3]}{5.03 [5]} = [2] 99,026 \text{ units}$

(c) **Profit if selling price dropped to €11 in 2011**

Sales (110,000 x €1)	1,210,000 [4]	
Less Variable costs (110,000 x €7.87)	(865,700) [4]	
Total Contribution (110,000 x €3.13)	344,300	
Less Fixed costs	<u>240,700 [4]</u>	
Profit	<u>103,600</u>	[2] €103,600

(d) **The selling price to be charged**

Let S be the selling price

Sales	–	Variable costs	=	Fixed costs	+	Profit
90,000S [1]	–	90,000[7.32 + 0.05S] [5]	=	[3] 252,784	+	227,000 [3]
90,000S	–	[658,800 + 4,500S]	=	479,784		
90,000S	–	4,500S	=	479,784	+	658,800
85,500S			=	1,138,584		
S P			=	€13.3167		[2] €13.32

(e) Let the number of units = N
 Sales Revenue = 16N
 Profit = 1.6N

Sales = Variable Costs + Fixed Costs + Profit
 16N [2] = 8.12N [4] + 225,700 [2] + 1.6N [4]
 6.28N = 225,700
 N = 35,939.49 [2] **35,940 units**

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(f)

Limitations/assumptions: [7]

Variable costs are assumed to be completely variable at all levels of output. However variable costs may decrease due to economies of scale or may increase because of increased costs.

It is assumed that in marginal costing fixed costs remain the same although most fixed costs are step-fixed and are only fixed within a relevant range.

It is assumed that all mixed costs are easily separated into fixed or variable. The High Lo method can be used for this purpose but it is not always possible to do this.

It is assumed that the selling price per unit is constant and does not allow for discounts.

Production in a period usually equals sales. Fixed costs are charged in total to a period and are not carried forward to next period.

Step Fixed Cost

Step fixed costs are costs that are fixed within a certain range of activity but change outside of that range. E.g. Rent could be fixed up to a certain level of production. However, if production increases and results in the rental of more factory space, then the rent would increase to a new level. Thus the fixed costs would increase in steps.

Graph [5]

