

**C 6 - Homework Problem: Complete Prior To Class**  
**CVP ANALYSIS – ANSWER KEY**

311c6key.doc  
 Greg Burbage ©

Put your answer to each of the following questions on the line provided. Round your numerical answers to 3 significant decimal places, if not even. Round monetary answers to the nearest whole dollar.

Assume the following: USP = 80; UVC = 60; FC = 5,000; Units sold = 365

$$365 \times 80 = 29200 \quad 365 \times 60 = 21900$$

Prepare a CM Income Statement including per unit and percentages. →

Use acronyms, this is for your use only in answering the following questions.

<b>S</b>	<b>29200</b>	<b>80</b>	<b>100%</b>
<b>VC</b>	<b>21900</b>	<b>60</b>	<b>75%</b>
<b>CM</b>	<b>7300</b>	<b>20</b>	<b>25%</b>
<b>FC</b>	<b>5000</b>		
<b>NET</b>	<b>2300</b>		

**20** How much is the Unit Contribution Margin (UCM)?

**SEE CM INCOME STATEMENT TO RIGHT**

**25%** How much is the Contribution Margin Ratio (CMR)?

**SEE CM INCOME STATEMENT TO RIGHT**

**20,000** How much is the Break-Even Point in dollars (BEP\$)?

$$FC / CMR = BEP\$ \quad 5000 / .25 = 20,000$$

**250** How much is the Break-Even Point in units (BEP#)?

$$FC / UCM = BEP\# \quad 5000 / 20 = 250$$

**9200** How much is the Margin of Safety in dollars?

$$CURRENT SALES - BEP\$ = MS \quad 29200 - 20000 = 9200$$

**.315** How much is the Margin of Safety percentage?

$$MS\$ / S = MS\% \quad 9200 / 29200 = .3150684$$

**3.174** How much is the Operating Leverage Factor?

$$CM / NET = OP LEV \quad 7300 / 2300 = 3.173913$$

**300** How much would net income change if sales decrease by \$1,200?  
 Use UCM or CMR approach.

$$CHANGE IN S \times CMR = CHANGE IN CM = CHANGE IN NET, \text{ assuming no change in FC}$$

$$1200 \times .25 = 300$$

**337** How many units would have to be sold to generate a net income of \$1,740?

$$(FC + DESIRED PROFIT) / UCM = TP\# \quad (5000 + 1740) / 20 = 337 \text{ units}$$

$$PROOF: (UNITS SOLD \times UCM) - FC = NET \quad (337 \times 20) - 5000 = 1740$$

**26960** How much would sales have to be to generate a net income of \$1,740?

$$(FC + DESIRED PROFIT) / CMR = TP\$ \quad (5000 + 1740) / .25 = 26960$$

$$PROOF: (S \times CMR) - FC = NET \quad (26960 \times .25) - 5000 = 1740$$