

# AFA200 Tutoring FAQ Tip Sheet

## Q: Making a Contribution Margin Income Statement

Cost Per Membership	\$30 per student
Number of members	400
Variable expenses	\$4
Operating expenses (fixed expenses)	\$3200

### Solution

Revenue (\$30 x 400 students)	\$12,000
Variable Costs (\$4 x 400 students)	\$1600
Contribution Margin	<b>\$10,400</b>
Operating Expenses	\$3,200
<b>Operating Income</b>	<b>\$7,200</b>

## Q: How many members are needed to break even?

- 1) Find the contribution per unit:  $(\$30 - \$4) = \$26$
- 2) What are the fixed expenses? \$3200
- 3) To get the breakeven point

$$26X = \$3200$$

$$X = \$3,200 / \$26$$

$$X = 123 \text{ members}$$

- 4) To verify the calculation:

Revenue (\$30 x 123 students)	\$3,690
Variable Costs (\$4 x 123 Students)	\$492
Contribution margin	\$3,198
Operating Expenses	\$3,200
Operating Income	(\$2)

Since the number of members was rounded, income not 0 and a nominal amount.

**Another approach to solving break even and target profit.** The formula for finding the sales in unit for a certain profit or breakeven use the following formula:

- **Sales in units** =  $(\text{Fixed Expenses} + \text{Operating Income}) / \text{CM per unit}$

If the target is breakeven for the above example

$$\text{Sales in units} = (\$3,200 + 0) / \$26$$

$$\text{Sales in units} = 123$$

Which agrees with the above calculation.

## Q: What if the Gym wants to earn a profit of \$7,500?

$$\text{Sales in units} = (\$3,200 + \$7,500) / \$26$$

$$\text{Sales in units} = 411.5$$

$$\text{Sales in units (rounded)} = 412 \text{ members}$$

# AFA200 Tutoring FAQ Tip Sheet

Contribution Margin Statement:

Revenue ( 412 members x \$30)	\$12,360
Variable costs ( 412 members x \$4)	\$1,648
<b>Contribution Margin</b>	<b>\$10,712</b>
Operating Expenses	\$3,200
<b>Operating Income</b>	<b>\$7,512</b>

Therefore, 412 members are needed to earn a profit of \$7,500.

## **Q: What is margin of safety?**

Margin of safety is the **excess** of actual or expected sales over break even sales. It is the cushion or drop in sales, the company can absorb without incurring a loss

**Example: If John LTD generally sells 900 toys a month and the breakeven point is 500 units and each toy is sold for \$40**

### **What is the margin of safety in units?**

Margin of safety in units = Expected sales in units – Break even sales in units

Margin of safety in units = 900 – 500

Margin of safety in units = 400 units

### **What is margin of safety in dollars?**

Margin of safety in dollars = Expected sales in dollars – Break even sales in dollars

Margin of safety in dollars = (900 x \$40) – (500 x \$40)

**Margin of safety in dollars = \$16,000**

Therefore, the margin of safety in dollars is \$16,000.

## **Q: If XYZ expects the manufacturing overhead during the year to be incurred is \$400,000 and expects 20,000 DL hours. What is the predetermined overhead rate if DL is the driver?**

Predetermined MOH Rate = Total estimated MOH/Total estimated amount of driver

Predetermined MOH Rate for XYZ = \$400,000/20,000 DL hours

**Predetermined MOH Rate for XYZ = \$20 per DL hour**

## **Q: During the year XYZ expects that Job 20 will require 1,200 DL hours. Calculate the MOH allocated for the job?**

MOH allocated to Job 20 = Predetermined rate x Actual DL hours allocated to job

Job 20 MOH = (\$20 x 1,200)

Job 20 MOH = \$24,000

**The total MOH for Job 20 \$24,000.**

# AFA200 Tutoring FAQ Tip Sheet

**Q: ABC Ltd is a business that manufactures toys. Toy store has offered to buy 1000 toys of ABC Ltd \$6.25 for each toy. ABC Ltd has capacity to manufacture these toys. Should ABC Ltd accept the special order?**

The costs associated with making one toy:

Direct material	\$2.25
VOH	\$0.75
Direct Labor	\$1
Fixed OH	\$5,000

If ABC Ltd accepts the offer;

Sales	6,250
Direct materials	2,250
VOH	750
Direct Labor	1,000
<b>Income from special order</b>	<b>\$2,250</b>

Therefore, ABC should accept the special order as this order will help increase its income.

**Q: What if there wasn't additional capacity and ABC Ltd had to incur additional fixed costs of \$3,000. Should they accept the offer?**

Income from special order (answer from above)	\$2,250
Fixed costs	\$3,000
<b>Income (loss) from special order</b>	<b>(\$750)</b>

In this case, ABC Ltd **should not accept** the special order as they will be incurring a loss if the order is accepted.

**Q: Other than the income generated from a special order, what qualitative factors should managers consider?**

The following qualitative factors should be considered;

- If the special order product is sold below the regular selling price, other buyers will want it at a low price?
- Can the special order be the beginning of a long term business with the buyer?

**Q: Company JKL produces three types of shampoos which are Model A and B. They are planning to drop a model that generates negative income.**

Below are the details for each model:

	Model A	Model B	Total
Sales	245,000	532,000	777,000
VC	160,000	230,000	390,000
CM	85,000	302,000	387,000
Direct fixed costs	90,000	202,000	292,000
Common fixed costs	33,000	66,000	99,000
Total fixed costs	123,000	268,000	391,000
<b>Net income</b>	<b>(38,000)</b>	<b>34,000</b>	<b>(4,000)</b>

# AFA200 Tutoring FAQ Tip Sheet

Model A appears to be a model that is causing a loss within the company. However, we have to consider some items;

- Does the product generate a positive CM?
- Can any of the fixed costs be avoided if the product is discontinued?

Now let's assume the direct fixed costs can only be avoided if the product is discontinued.

	Model A	Model B	Total
Sales		532,000	532,000
VC		230,000	230,000
CM		302,000	302,000
Direct fixed costs		202,000	202,000
Common fixed costs	33,000	66,000	99,000
Total fixed costs	33,000	268,000	301,000
<b>Net income</b>	(33,000)	34,000	1,000

Therefore, since the direct fixed costs are avoidable as a result of removing Model A, the **model should be removed** as this will increase JKL's income from (-\$4,000) to \$1,000. However, the company should consider whether removing model A can cause the sales of Model B to drop.

**Q: If company ABC is planning to purchase a machine which costs \$40,000 and they expect that it will generate an annual net cash inflow of \$10,000. What is the payback period?**

Payback period = (Amount invested/Expected annual net cash inflow)

Payback period = (40,000/10,000)

Payback period = 4 years

Therefore, it will take 4 years to pay back.