**Marketing Math Problems**

1. **Assume a retailer has fixed costs of $10,000, a unit variable cost of $25, and a 50% retail margin.**
   1. **How many units must be sold for her to break-even?**

Fixed Costs/Unit Margin

$10,000/$12.5 = 800

800 units must be sold.

* 1. **If she has a target profit of $200,000, how many units must she sell to achieve the target profit?**

Target Profit = Selling Price\*Volume - Fixed Costs – Variable Costs\*Volume

$200,000 = $37.50 \* V - $10,000 – $25 \* V

$210,000 = V ($37.50-$25)

V = $210,000 / ($12.50) = 16,800

**V = 16,800**

1. **The manufacturer of Aromello, a new body lotion, sells it directly to retailers who take a 40% margin. The retail price of Aromello is $5 per bottle. Industry sales for Aromello and other products of its type are 25 million units annually; Aromello has 20% of the market. The manufacturer’s fixed costs, including all expenses but advertising, amount to $2 million per year. The annual advertising budget is another $2 million. The raw materials of each bottle of Aromello cost 50 cents, while packaging, bottling, and all other variable costs (including shipping, breakage, insurance…) are another 50 cents.**
   1. **What is the unit margin of Aromello for the manufacturer?**

Unit Selling Price – Unit Variable Cost

$5 - $1 **= $4**

* 1. **What is the break-even volume?**

Fixed Costs / Unit Margin

$4,000,000 / $4 = **1,000,000**

* 1. **What is the current volume of Aromello given its market share? Are they making profit?**

**20% of 25,000,000 = 5,000,000**

**Aromello currently accounts for 5,000,000 units of sales. Since 1,000,000 units is their breakeven volume they are making a profit.**