E11.5

- **Background Info:**
  - **Sales revenue: €500000**
  - **Variable cost: €350000**
  - **Fixed cost: €135000**

a) $Percentage\ of\ the\ contribution\ margin = \frac{€500000 - €350000}{€500000} \times 100\% = 30\%$

b) Sales revenue to achieve the break-even point:

Assume that the sales quantity is represented by α

Then,

$$Sales\ price = \frac{500000}{\alpha}$$

$$Variable\ cost\ per\ unit = \frac{350000}{\alpha}$$

$$Break - even\ point = \frac{135000}{\frac{500000}{\alpha} - \frac{350000}{\alpha}} = 0.9\alpha$$

$$\text{Sales revenue in Qa} = Sales\ price \times Break - even\ point = \frac{500000}{\alpha} \times 0.9\alpha = 450000$$

c) Sales revenue at profit of €45000:

Assume that the sales quantity now is represented by β

Then,

$$\frac{500000}{\alpha} \times \beta - 135000 - \frac{350000}{\alpha} \times \beta = 45000$$

$$\beta = 1.2\alpha$$

$$\text{Sales revenue in Qb} = \frac{500000}{\alpha} \times 1.2\alpha = 600000$$

d) Sales revenue at profit of €42000 after 20% tax:

Assume that the sales quantity now is represented by γ

Then,

$$\frac{500000}{\alpha} \times \gamma - 135000 - \frac{350000}{\alpha} \times \gamma = 42000 \div 0.8$$

$$\gamma = 1.25\alpha$$

$$\text{Sales revenue in Qc} = \frac{500000}{\alpha} \times 1.25\alpha = 625000$$