

Let's make the following denotations:

$$Q_1 = 4000;$$

$$P_1 = \$70$$

$$P_2 = \$63$$

$$E = 2,5$$

We need to find Q_2 .

The elasticity formula is:

$$E = \frac{Q_2 - Q_1}{Q_1} \cdot \frac{P_2 - P_1}{P_1}$$

If company decreases the price to \$63 the quantity of the sold skateboards would be:

$$Q_2 = Q_1 + \frac{E * Q_1 * (P_2 - P_1)}{P_1}$$

$$Q_2 = 4000 + \frac{2,5 * 4000 * (63 - 70)}{70} = 3000$$

Company's revenue before the price decreasing:

$$R_1 = Q_1 * P_1 = 4000 * 70 = 28000$$

Company's revenue after the price decreasing:

$$R_2 = Q_2 * P_2 = 3000 * 63 = 189000$$

As we can see, company's revenue decreases on \$91 000, if it decreases the price, because the quantity of the sold skateboards decreases too.