

Question number 1

$$y = 0,536 \cdot e^{0,317x}$$

↓ ↓

$$7,5 \cdot 10^9 \qquad 2,72$$

$$\frac{7,5 \cdot 10^9}{0,536} = 2,72^{0,317x}$$
$$13 \cdot 10^9 = 2,72^{0,317x} \qquad x = \frac{23,2}{0,317} = 74$$

$$0,317x = t$$

$$t = \ln(13 \cdot 10^9) = 23,2$$

$$y = 0,536 \cdot 2,72^{0,317 \cdot 74}$$

Question number 2

$$y = 0,536 \cdot e^{0,317x}$$

↓ ↓

$$1 \qquad 2,72$$

$$y = \frac{1}{0,536} = 1,8$$

$$1,8 = e^t$$

$$1,8 = 0,6$$

$$\frac{0,6}{0,317} = 1,85$$

Handwritten work on grid paper showing the derivation of $x = 74$ from the equation $7,5 \cdot 10^9 = 0,536 \cdot 2,72^{0,317x}$. The steps include dividing both sides by 0,536, taking the natural logarithm, and solving for x.

Handwritten work on grid paper showing the derivation of $t = 23,2$ from the equation $1,8 = e^t$. The steps include taking the natural logarithm of both sides and solving for t.