$$\frac{O_2}{O_1} = \frac{V_2}{V_1} \times \frac{t_2}{t_1}$$

$$\frac{n \log n}{n \log n} = \frac{V_2}{2V_2} \times \frac{t_2}{8}$$

$$\frac{100 \log 100}{10 \log 10} = \frac{1}{2} \times \frac{t_2}{8}$$

$$\frac{10 \log 10^2}{\log 10} = \frac{1}{2} \times \frac{t_2}{8}$$

$$\frac{10 \times 2 \log 10}{\log 10} = \frac{1}{2} \times \frac{t_2}{8}$$

$$10 \times 2 = \frac{1}{2} \times \frac{t_2}{8}$$

$$20 = \frac{1}{2} \times \frac{t_2}{8}$$

$$20 = \frac{t_2}{16}$$

$$t_2 = 16 \times 20$$

$$t_2 = 320$$