Task. Find the present value, using the present value formula and a calculator. (Round your answer to the nearest cent.) Achieve \$225,500 at 8.55% compounded continuously for 8 years, 145 days.

Solution. Recall that continuous compound interest formula has thefollowign form:

$$A = Pe^{rt},$$

where

- P is the principal amount (initial investment),
- r is the annual interest rate (as a decimal),
- t is the number of years,
- A is the amount after time t.

Hence

$$P = Ae^{-rt}.$$

We have that

$$A = \$225,500,$$
$$r = 8.55\% = 0.0855.$$

Assume that the year has 365 days, then

$$t = 8 + \frac{145}{365} \approx 8.39726.$$

Substituting into the formula we get

$$P = Ae^{-rt} = 225500 * e^{-0.0855*8.39726} = 225500 * e^{-0.71797} \approx 225500 * 0.48774 \approx 109985.37.$$

Answer. $\$109,985.37$