

Answer on question 37524 – Math – Algebra

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, 155 days.

Solution

Recall that continuous compound interest formula has the following form:

$$A = Pe^{rt}$$

Where

- P is the principal amount (initial interest);
- 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

$$A = 225500 \$$$

$$r = 8.55\%$$

Assume that the year has 365 days, then

$$t = 8 + \frac{155}{365} \approx 8.42466.$$

Substituting into the formula we obtain

$$P = Ae^{-rt} = 225500e^{-0.0855 \cdot 8.42466} \approx 225500 * e^{-0.72} \approx 109770.83$$

Answer: 109770.83.