

Answer on question 37082 – 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 8.75% compounded continuously for 8 years, 145 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

$$A = 225500 \$$$

$$r = 8.75\%$$

Assume that the year has 365 days, then

$$t = 8 + \frac{145}{365} \approx 8.4028.$$

Substituting into the formula we obtain

$$P = Ae^{-rt} = 225500e^{-0.0875 \cdot 8.4028} \approx 225500 * e^{-0.74} \approx 107538.89$$

Answer: 107538.89.