

**Problem 1:** David and Helen Zhang are saving to buy a boat at the end of five years. If the boat costs 20,000 and they can earn 10% a year on their savings, how much do they need to put aside at the end of years 1 through 5?

**Sol:**

N	I/Y	PV	PMT	FV
5.00	10	0.00	?	20,000.00

$$\text{PMT} = 3,275.95$$

**Problem 2:** You need to have \$50,000 at the end of 10 years. To accumulate this sum, you have decided to save a certain amount at the end of each of the next 10 years and deposit it in the bank. The bank pays 8 percent interest compounded annually for long-term deposits. How much will you have to save each year (to the nearest dollar)?

**Sol:**

N	I/Y	PV	PMT	FV
10.00	8	0.00	?	50,000.00

$$\text{PMT} = 3,451.47$$

**Problem 3:** A 55-year-old executive will retire at age 65 and expects to live to age 75. Assuming a 10 percent rate of return, calculate the amount he must have available at age 65 in order to receive \$10,000 annually from retirement until death.

**Sol:**

N	I/Y	PV	PMT	FV
10.00	10	?	10,000.00	0.00

$$\text{PV} = 61,445.67$$

**Problem 4:** Kangaroo Autos is offering free credit on a new \$10,000 car. You pay \$1,000 down and then \$300 a month for the next 30 months. Turtle Motors next door does not offer free credit but will give you \$1,000 off the list price. If the rate of interest is 10% a year, (about 0.83% a month) which company is offering the better deal?

**Sol:**

**Kangaroo**

N	I/Y	PV	PMT	FV
30.00	0.01	?	300.00	0.00

PV down payment = 1,000.00

PV of installment = 7,938.02

**Total cost = 8,938.02**

**Turtle**

**Total cost = 9,000.00**

Hence, Kangaroo is offering a better deal because of its lower total cost of car.