***Compound Interest.*** *For the next two problems apply folmula:* A = P(1 + i)n *and use scientic calculator.
I – interest rate per period in decimal form, annual rate divided by number of periods per year
P – deposit
n –total number of deposits over all given years*

Problem 1.


Problem 2.


***Continuous Interest.*** *For the next two problems apply folmula: A =P* $e^{it}$ *and use scientic calculator.
I – annual interest in decimal form
P – deposit
t – number of years*

Problem 3.
$1,000 was desited on account that has continuous interest with annual interest rate 2%.
How much will be on this account after 5 years?

Problem 4.
Let’s say you put in a bank $5,000. How much will be on your account in 10 years
if bank calculates continuous interest with annual interest rate 3%?

**Mortgage monthly payment.***For the next two problems apply folmula:* R = $\frac{i\*P}{1- (1+i)^{-n}}$ *and use scientic calculator.
I – interest rate per month in decimal form, annual rate in decimal form divided by 12
P – principal, amount you borrow from bank
n –total number of payments over all given years*

*If you have problem with your calculator to find* $\left(1+i\right)^{-n}$ *find* $\left(1+i\right)^{n}$ *first and then divide 1 by this value.
For example, find* $\left(1+0.02\right)^{-120}$ *.
Using* $y^{x}$ *function on calculator find* $\left(1+0.02\right)^{120}$ *=* $\left(1.02\right)^{120}$ *= 10.765
Then* $\left(1.02\right)^{-120}$ *= 1 /10.765 = 0.09289*

Problem 5.
Calculate monthly payment on a mortgage $200,000.00 over 10 years.
Annual percentage rate is 4.8%

Problem 6.
Price for the house is $400,000. You paid $40,000 as down payment and the rest took as mortgage.
Calculate monthly payment on this mortgage over 30 years. Annual percentage rate is 6%.