FINANCE 335
HOMEWORK #3

1. What is the future value of $60,000 invested today if it is invested at 6% compounded annually for six years?

6N 6 I/Y −60,000 PV CPT FV
$85,111

2. How much would you have to invest now at 8% compounded annually to have $70,000 available for the purchase of a car four years from now?

4 N 8 I/Y 70000 FV CPT PV
$51,452

3. You will receive a $3,000,000 inheritance in 10 years. You can invest today at 5% compounded annually. What is the present value of your inheritance?

10 N 5 I/Y 3000000 FV CPT PV
1,841,739.76

4. Your grandfather placed $100,000 in a trust for you. In 8 years the fund will be worth $200,000. What is the rate of return on the trust fund?

72 ÷ 8 = 9%
8N −100000PV
200000 FV
CPT I/Y 9.05%

5. You need $1,500 to buy a stereo for your car. If you have $1200 to invest at 7% compounded annually, how long will you have to wait to buy the stereo?

7 I/Y −1200 PV 1500 FV
CPT N 3.3

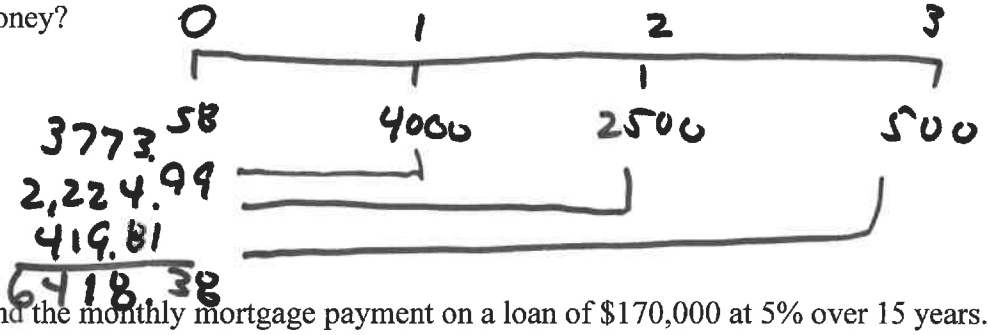
6. Granny puts $40,000 into a bank account earning 7%. You can't withdraw the money until the balance has doubled. How long will you have to leave the money in the account?

7 I/Y -40,000 PV 80000 FV

CPT N 10.24

72 ÷ 7 = 10.3

7. What is the total value today of $4,000 received in one year, $2,500 received in two years, and $500 received in three years if you can earn 6% per year on your money?



8. Find the monthly mortgage payment on a loan of $170,000 at 5% over 15 years.

15 × 12 = 180 N 5 ÷ 12 = I/Y -170,000 PV

0 FV CPT PMT

$1344.35

9. What is the present value of receiving $200,000 at the end of each year forever if you can earn 8% on your money?

$$PV = \frac{200\,000}{.08} = \$2,500,000$$

10. What is the effective annual rate of 12% compounded quarterly?

$(1 + \frac{.12}{4})^4 - 1 = 12.55\%$

11. At the end of each of the next 6 years you will receive cash flows of $12,000. If the appropriate discount rate is 6%, how much would you pay for the annuity?

6 N −12000 PMT 6 I/Y CPT PV

$59,007.89

12. Mr. J. won a lottery that pays $100,000 at the end of each of the next 10 years. If he can earn 5% on his money, how much has he actually won in today's dollars?

10 N 5 I/Y 100000 PMT CPT PV

$772,173.49

13. Your parents placed $300,000 in a bank account paying 7% interest. How much can you withdraw from the account each and every year for 10 years? (The same amount is drawn out at the end of each year).

7 I/Y −300000 PV 10 N

CPT PMT

$42,713.25