

## Week in Review #10

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1.  $N = 4 \cdot 7$ ;  $I = 6$ ;  $PV = -900$ ;  $FV = 7000$ ;  $P/Y=C/Y=4$ ; Solve for PMT; Answer: \$150.77
2. (a)  $N = 9 \cdot 12$ ;  $I = 5.6$ ;  $PV = -100$ ;  $PMT = -20$ ;  $P/Y=C/Y=12$ ; Solve for FV; Answer: \$2965.58  
(b) \$705.58
3. (a)  $N = 12 \cdot 4$ ;  $I = 7$ ;  $PV = 0$ ;  $PMT = -50$ ;  $P/Y=C/Y=12$ ; Solve for FV; Answer: \$2760.46  
(b)  $N = 12 \cdot 6$ ;  $I = 7$ ;  $PV = -2760.46$ ;  $PMT = -100$ ;  $P/Y=C/Y=12$ ; Solve for FV; Answer: \$13112.28
4. (a)  $N = 20$ ;  $I = 7$ ;  $PV = -1500$ ;  $PMT = -250$ ;  $P/Y=C/Y=12$ ; Solve for FV; Answer: \$6972.07  
(b) Ballance at the end of the 19th payment = \$6683.09  
  
interest =  $6972.07 - 6683.09 - 250 = \$38.98$   
(c) ballance at the end of 3rd year = 11,831.91  
ballance at the end of the 2nd year = 8,144.97  
payments made during the 3rd year =  $12 \cdot 250 = 3000$   
interest =  $11831.91 - 8144.97 - 3000 = \$686.94$
5. (a)  $N = 7 \cdot 4$ ;  $I = 5.8$ ;  $PV = 0$ ;  $FV = 120000$ ;  $P/Y=C/Y=4$ ; Solve for PMT; Answer: \$3505.00  
(b)  $120000 - 3505 \cdot 7 \cdot 4 = \$21860$
6. (a)  $N = 12 \cdot 4$ ;  $I = 12.5$ ;  $PMT = 0$ ;  $FV = 10000$ ;  $P/Y=C/Y=4$ ; Solve for PV; Answer: \$2283.13  
(b)  $N = 12 \cdot 4$ ;  $I = 12.5$ ;  $PV = -700$ ;  $FV = 10000$ ;  $P/Y=C/Y=4$ ; Solve for PMT; Answer: \$64.11
7. (a)  $N = 5 \cdot 12$ ;  $I = 14.5$ ;  $PV = 4500$ ;  $FV = 0$ ;  $P/Y=C/Y=12$ ; Solve for PMT; Answer: \$105.88  
(b)  $N = 3 \cdot 12$ ;  $I = 14.5$ ;  $PV = 4500$ ;  $FV = -1100$ ;  $P/Y=C/Y=12$ ; Solve for PMT; Answer: \$130.32
8. (a)  $N = 6 \cdot 12$ ;  $I = 0.75$ ;  $PMT = 60$ ;  $FV = 0$ ;  $P/Y=C/Y=12$ ; Solve for PV; Answer: \$4222.95  
(b)  $6 \cdot 12 \cdot 60 - 4222.95 = 97.05$
9. first figure out the ballance at the end of the 30 years  
 $N = 30 \cdot 12$ ;  $I = 8$ ;  $PV = 0$ ;  $PMT = 125$ ;  $P/Y=C/Y=12$ ; Solve for FV; Answer: \$186294.93  
Now see what type of payments this will generate.  
 $N = 18 \cdot 12$ ;  $I = 8$ ;  $PV = -186294.93$ ;  $FV = 0$ ;  $P/Y=C/Y=12$ ; Solve for PMT; Answer: \$1630.01
10. (a) first figure out how much they can afford to borrow.  
 $N = 30 \cdot 12$ ;  $I = 7.2$ ;  $PMT = 800$ ;  $FV = 0$ ;  $P/Y=C/Y=12$ ; Solve for PV; Answer: \$117857.09  
amount borrowed + deposit = price of the house  
 $117857.09 + 30000 = \$147857.09$

(b)  $N = 30 \cdot 12$ ;  $I = 7.2$ ;  $PV = 109000$ ;  $FV = 0$ ;  $P/Y=C/Y= 12$ ; Solve for PMT; Answer: \$739.88

(c) amortization table.

| period | interest owed | payment | amt. toward principal | outstanding principal |
|--------|---------------|---------|-----------------------|-----------------------|
| 0      | —             | —       | —                     | 109000                |
| 1      | 654           | 739.88  | 85.88                 | 108914.12             |
| 2      | 653.48        | 739.88  | 86.4                  | 108827.72             |
| 3      | 652.97        | 739.88  | 86.91                 | 108740.81             |

(d) first find how much is owed after 12 years.

$N = 12 \cdot 12$ ;  $I = 7.2$ ;  $PV = 109000$ ;  $PMT = -739.88$ ;  $P/Y=C/Y= 12$ ; Solve for FV; Answer: \$89440.62

Equity = value of the object - amount still owed

$$\text{Equity} = 139000 - 89440.62 = \$49559.38$$

11. downpayment =  $0.15 \cdot 114000 = 17,100$

(a)  $N = 12 \cdot 12$ ;  $I = 6.45$ ;  $PV = 96900$ ;  $FV = 0$ ;  $P/Y=C/Y=12$ ; Solve for PMT; Answer: \$968.32

(b) first find how much is owed after 7 years.

$= 7 \cdot 12$ ;  $I = 6.46$ ;  $PV = 96900$ ;  $PMT = -968.32$ ;  $P/Y=C/Y= 12$ ; Solve for FV; Answer: \$49548.57

Equity = value of the object - amount still owed

$$\text{Equity} = 114,000 - 49,548.57 = \$64,451.43$$

12. (a)  $N = 3 \cdot 12$ ;  $I = 6.3$ ;  $PMT = -350$ ;  $FV = -4500$ ;  $P/Y=C/Y=12$ ; Solve for PV; PV = \$15,180.49

$$\text{Answer: } 15,180.49 + 3000 = \$18,180.49$$

(b)  $I = 6.3$ ;  $PV = 15180.49$ ;  $PMT = -350$ ;  $FV = 0$ ;  $P/Y=C/Y=12$ ; Solve for N;  $N = 49.3465$

There will be a total of 50 payments (49 full payments and 1 partial payment).

number of payments still left is  $50 - 36 = 14$ .