

Week in Review #7

1. (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
2. (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
3. (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

$$\text{interest} = 6972.07 - 6683.09 - 250 = \$38.98$$
 (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 = $12 \cdot 250 = 3000$

$$\text{interest} = 11831.91 - 8144.97 - 3000 = \$686.94$$
4. (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
5. (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
6. (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
7. (a) $N = 6 \cdot 12$; $I = 0.75$; $PMT = 60$; $FV = 0$; $P/Y=C/Y=12$; Solve for PV; Answer: \$4222.95
 (b) $6 \cdot 12 \cdot 60 - 4222.95 = 97.05$
8. 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
9. (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

$$\text{amount borrowed} + \text{deposit} = \text{price of the house}$$

$$117857.09 + 30000 = \$147857.09$$
 (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

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

10. $\text{downpayment} = 0.15 \cdot 114000 = 17,100$

(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

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

11. (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 $50 - 36 = 14$.