Week in Review #7

1. \( N = 4 \times 7; \ I = 6; \ PV = -900; \ FV = 7000; \ P/Y = C/Y = 4; \) Solve for PMT; Answer: $150.77

2. (a) \( N = 9 \times 12; \ I = 5.6; \ PV = -100; \ PMT = -20; \ P/Y = C/Y = 12; \) Solve for FV; Answer: $2965.58
   (b) $705.58

3. (a) \( N = 12 \times 4; \ I = 7; \ PV = 0; \ PMT = -50; \ P/Y = C/Y = 12; \) Solve for FV; Answer: $2760.46
   (b) \( N = 12 \times 6; \ I = 7; \ PV = -2760.46; \ PMT = -100; \ P/Y = C/Y = 12; \) 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) Balance at the end of the 19th payment = $6683.09
       interest = 6972.07 - 6683.09 - 250 = $38.98
   (c) Balance at the end of the 3rd year = $11,831.91
       Balance at the end of the 2nd year = $8,144.97
       Payments made during the 3rd year = 12 * 250 = 3000
       interest = $11831.91 - 8144.97 - 3000 = $686.94

5. (a) \( N = 7 \times 4; \ I = 5.8; \ PV = 0; \ FV = 120000; \ P/Y = C/Y = 4; \) Solve for PMT; Answer: $3505.00
   (b) 120000 - 3505 * 7 * 4 = $21860

6. (a) \( N = 12 \times 4; \ I = 12.5; \ PMT = 0; \ FV = 10000; \ P/Y = C/Y = 4; \) Solve for PV; Answer: $2283.13
   (b) \( N = 12 \times 4; \ I = 12.5; \ PV = -700; \ FV = 10000; \ P/Y = C/Y = 4; \) Solve for PMT; Answer: $64.11

7. (a) \( N = 5 \times 12; \ I = 14.5; \ PV = 4500; \ FV = 0; \ P/Y = C/Y = 12; \) Solve for PMT; Answer: $105.88
   (b) \( N = 3 \times 12; \ I = 14.5; \ PV = 4500; \ FV = -1100; \ P/Y = C/Y = 12; \) Solve for PMT; Answer: $130.32

8. (a) \( N = 6 \times 12; \ I = 0.75; \ PMT = 60; \ FV = 0; \ P/Y = C/Y = 12; \) Solve for PV; Answer: $4222.95
   (b) \( 6 \times 12 \times 60 - 4222.95 = 97.05 \)

9. first figure out the balance at the end of the 30 years
   \( N = 30 \times 12; \ I = 8; \ PV = 0; \ PMT = 125; \ P/Y = C/Y = 12; \) Solve for FV; Answer: $186294.93
   Now see what type of payments this will generate.
   \( N = 18 \times 12; \ I = 8; \ PV = -186294.93; \ FV = 0; \ P/Y = C/Y = 12; \) Solve for PMT; Answer: $1630.01

10. (a) first figure out how much they can afford to borrow.
    \( N = 30 \times 12; \ I = 7.2; \ PMT = 800; \ FV = 0; \ P/Y = C/Y = 12; \) Solve for PV; Answer: $117857.09
     Amount borrowed + deposit = price of the house
     $117857.09 + 30000 = $147857.09
(b) $N = 30 \times 12; I = 7.2\%; PV = 109000; FV = 0; P/Y=\text{C/Y}= 12$; Solve for $PMT$; Answer: $739.88$

(c) amortization table.

<table>
<thead>
<tr>
<th>period</th>
<th>interest owed</th>
<th>payment</th>
<th>amt. toward principal</th>
<th>outstanding principal</th>
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<td>—</td>
<td>—</td>
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<td>739.88</td>
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</table>

(d) first find how much is owed after 12 years.
$N = 12 \times 12; I = 7.2\%; PV = 109000; PMT = -739.88; P/Y=\text{C/Y}= 12$; Solve for $FV$; Answer: $89440.62$

Equity = value of the object - amount still owed

Equity = 139000 - 89440.62 = $49559.38$

11. downpayment = 0.15*114000 = 17,100

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

(b) first find how much is owed after 7 years.
$N = 7 \times 12; I = 6.46\%; PV = 96900; PMT = -968.32; P/Y=\text{C/Y}= 12$; Solve for $FV$; Answer: $49548.57$

Equity = value of the object - amount still owed

Equity = 114,000 - 49,548.57 = $64,451.43$

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

Answer: $15,180.49 + 3000 = $18,180.49$

(b) $I = 6.3\%; PV = 15180.49; PMT = -350; FV = 0; P/Y=\text{C/Y}=12$; 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.