1. 800 is the proceeds so $800 = M(1 - .18 \times 8/12)$ solving for $M$ gives $M = 909.09$.  
   
   discount = $M - P = 909.09 - 800$  
   
   $D = 109.09$

2. Interest is $= 850-600 = 250$  
   
   $I = Prt$  
   
   $250 = 600 \times r \times 12$  
   
   $r = 3.472\%$

3. $N = 25*12; I = 5.45; Pmt = -850; FV = 0; P/y=C/y=12$  
   
   solve for PV $= 139,092.28$  
   
   Answer: $139,092.28 + 20,000 = 159092.28$

4. $N = 5*2; I= 6.2; Pmt= 0; FV = 8000; P/y=C/y=2$  
   
   Answer: $8595.27$

5. Balance * $\frac{r}{m}$ = interest owed on the first payment  
   
   $25000 \times \frac{0.07}{4} = 437.5$  
   
   Payment-interest = amount toward the loan  
   
   payment= 462.50

6. $N = 4*5; I= 7; PV= -500; FV = 6000; P/y=C/y=4$  
   
   Answer: $223.30$

7. $I= 21; PV= -2000; Pmt=-50; P/y=C/y= 12$  
   
   balance at end of 5th year ($N = 5*12$) = 10897.39  
   
   balance at end of 4th year ($N = 4*12$) = 8312.34  
   
   interest = 10897.39 - 8312.34 - 12*50 = 1985.05

8. (a) $N = 7*12; I= 7.2; PV= 18000; FV = 0; P/y=C/y=12$  
   
   Payment is 273.43.  
   
   Interest = 273.43*12*7 - 18000.  
   
   Answer: $4968.12$

(b) $N = 4*12; I= 7.2; PV= 18000; PMT= -273.43; P/y=C/y=12$  
   
   Still owe (FV) = 8829.39  
   
   Equity = 18000-8829.39 = 9170.61

9. Do the math on the left side of the equation to get  
   
   $\begin{bmatrix} -14 \\ y+4 \\ 8 \end{bmatrix}$  
   
   now solve these equations for the variables:  
   
   $3x + 12y = 24$  
   
   $y + 4 = 8$  
   
   $2z = 6$  
   
   Answer: $x = -8, y = 4, z = 3$

10. (a) $x = 8, y = 0, z = 6$  
   
   (b) no solution

11. (a) $[2 \ 3] \ 
       8 \ 0 \ 
       4 \ 1$  
   
   (b) $[2x+5] 
       2y$  
   
   (c) not possible  
   
   (d) $[J \ 7 \ 1] \ 
       0 \ -1 \ K$

12. $(M + E)X = J$  
   
   $X = (M + E)^{-1} \times J$

13. $x = 6 - 2y$  
   
   $y =$ any number  
   
   $z = -2$

14. $x = $ the number of knives  
   
   $y = $ the number of forks  
   
   $z = $ the number of spoons  
   
   $x + y + z = 55$  
   
   $5.1x + 4.7y + 3.1z = 234$  
   
   $y = 3(x + z)$

15. $J = B \times A^{-1} = \begin{bmatrix} -16/3 \\ 5/3 \\ -5/2 \ 1 \end{bmatrix}$

16. $x = 2z - 9$  
   
   $y = 49 - 3z$  
   
   $z = 5, 6, 7, ..., 16$