1. 800 is the proceeds so $800 = M(1 - .18 * \frac{8}{12})$ solving for M gives $M = 909.09$.

   discount $= M - P = 909.09 - 800$

   $D = 109.09$

2. interest is = 850-600 = 250

   I = Prt
   $250 = 600 * r * 12$

   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: $5895.27

5. ballance * $\frac{r}{m}$ = interest owed on the first payment

   25000 * $\frac{0.07}{4}$ = 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

   ballance at end of 5th year(N = 5*12) = 10897.39
   ballance 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

$$\begin{bmatrix} \text{-14} & \text{3x + 12y} \\ \text{y+4} & 6 \end{bmatrix} = \begin{bmatrix} -14 & 24 \\ 8 & \text{2z} \end{bmatrix}$$

   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) $\begin{bmatrix} 2 & 3 \\ 8 & 0 \\ 4 & 1 \end{bmatrix}$

    (b) $\begin{bmatrix} \text{2x+5} \\ \text{2y} \end{bmatrix}$

    (c) not possible

    (d) $\begin{bmatrix} \text{J} & 7 & 1 \\ 0 & -1 & \text{K} \end{bmatrix}$

12. $(M + E)X = J$

    $X = (M + E)^{-1} * J$

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

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