1. interest is = 700-400 = 300

   I = Prt
   $300 = 400 * r * 24$

   r = 3.125%

2. 600 is the proceeds so $600 = M(1 - .15 * \frac{5}{12})$ solving for M gives $M = 640$.

   discount $= M - P = 640 - 600$

   $D = 40$

3. N = 20*12; I = 7.4; Pmt = −975; FV = 0; P/y=C/y= 12

   solve for PV = 121,952.80

   Answer: 121,952.80 + 10,000 = 131,952.80

4. N = 6*2; I= 5; Pmt= 0; FV = 7000; P/y=C/y= 2

   Answer: $5204.89

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

   30,000 * $\frac{0.05}{4}$ = 375

   payment-interest = amount toward the loan

   payment= 425

6. N = 4*4; I= 4; PV= -800; FV = 7000; P/y=C/y=4

   Answer: $ 342.45

7. I= 14; PV= -3000; Pmt=-150; P/y=C/y= 12

   ballance at end of 4th year(N = 4*12) = 14813.68
   ballance at end of 3rd year(N = 3*12) = 11218.22

   interest = 14813.68 - 11218.22- 12*150 = 1795.46

8. (a) N = 10*12; I= 4.3; PV= 22000; FV= 0; P/y=C/y=12

   payment= 225.89

   interest = 225.89*12*10 - 22000.

   Answer: $ 5106.80

   (b) N = 3*12; I= 4.3; PV= 22000; PMT= -225.89; P/y=C/y=12

   Still owe(FV) = 16360.09

   Equity = 22000-16360.09 = 5639.91

9. Do the math on the left side of the equation to get

$$\begin{bmatrix} \text{-5} & \text{2x - 4y} \\ \text{z+6} & 7 \end{bmatrix} = \begin{bmatrix} -5 & 6 \\ 10 & \text{2y} \end{bmatrix}$$

   now solve these equations for the variables:

   $2x - 4y = 6$
   $z + 6 = 10$
   $2y = 7$

   Answer: $x = 10$, $y = 3.5$, $z = 4$

10. (a) $x = 0$, $y = 7$, $z = 3$

    (b) no solution

11. (a) $\begin{bmatrix} 1 & 7 \\ 0 & 5 \\ 10 & 3 \end{bmatrix}$

    (b) $\begin{bmatrix} \text{3a + 8} \\ \text{3b} \end{bmatrix}$

    (c) not possible

    (d) $\begin{bmatrix} \text{C} & 5 \\ 2 & 1 \\ 5 & \text{F} \end{bmatrix}$

12. $(A + B)X = F$

    $X = (A + B)^{-1}F$

13. $x = -27 - 3y$
    $y =$ any number
    $z = 13$

14. $x =$ the number of knives
    $y =$ the number of forks
    $z =$ the number of spoons

    $x + y + z = 33$
    $6.1x + 4.5y + 3.8z = 175$
    $z = 3(x + y)$

15. $J = B * A^{-1} = \begin{bmatrix} -8.4 & 4 \\ -6.4 & 3 \end{bmatrix}$

16. $x = 5 + z$
    $y = 95 - 2z$
    $z = 0, 1, 2, ..., 47$