Final Review I Key:

6.1/6.2

1. None are in r.r.e.f. For the first, $R1 \to R1 - R3$, then R1($\frac{1}{3}$) solution is (-1, 4, 3, 5). For the second, take R2(1/2), solution is (5, 7/2). For the third, interchange R3 and R4. Solution is (.5, 7, 2, 4).

2. (1, 2, -1), no solution, $(c - b(\frac{4-ac}{3-ba}), \frac{4-ac}{3-ba})$, $(\frac{\eta - \beta\frac{\mu - \frac{\delta}{\alpha}\eta}{\varepsilon - \delta/2}}{\alpha}, \frac{\mu - \frac{\delta}{\alpha}}{\varepsilon - \frac{\delta}{\alpha}})$

3. Sally is 9. Jane is 18.
4. The first two are allowable; the others are not.

5. –2, ax-6, -8, b(3a-2)

6.3/6.4

1. $\begin{bmatrix} 9 & 12 & 12 \\ 8 & 25 & 17 \\ 17 & 44 & 32 \end{bmatrix}$ 2. $\begin{bmatrix} 32 & 10 \\ 50 & 10 \end{bmatrix}$ 3. undefined 4. $\begin{bmatrix} 2a+3b & ac & a+bd \\ 8 & c & 1+2d \end{bmatrix}$

5. undefined 6. $\begin{bmatrix} 13+ba & 14+2a+2a^2 \\ 21+3a+3a^2 & 6+12a+a^3 \end{bmatrix}$ 7. $\frac{1}{a-6}\begin{bmatrix} a & -2 \\ -3 & 1 \end{bmatrix}$

8. only $\begin{bmatrix} 2 & 3 \\ 1 & 5 \end{bmatrix}$ 9. (31, 33) (51, 43) 10. done
11. the first two
12. a and d only
13. answers will vary; here are mine
a. the set of all hearts in a standard deck, the set of all spades in a standard deck
b. the set of all even natural numbers, the set of all odd natural numbers
c. the set of all aces in a standard deck, the set of all hearts in a standard deck
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