1. [3 *points*]

Solve the following equations:

(a) $8x - 15 = 6x + 3$

(b) $2x\sqrt{3} - 1 = 3x + 1$

2. [5 *points*]

Solve the following systems of equations:

(a) $\begin{cases} 2x + 3y = 1 \\ 3x + 4y = 3 \end{cases}$

(b) $\begin{cases} x + y - z = 6 \\ 2x + y + 2z = 1 \\ 3x - 2y - 2z = 1 \end{cases}$

3. [4 *points*]

For the following system of equations find the values of a and b for which this system is:

(i) consistent with 1 solution,

(ii) consistent with infinitely many solutions,

(iii) inconsistent.

$$\begin{cases} 4x - 8y = b \\ 6x + ay = 2 \end{cases}$$