1. $4ax - 1 + 3a = 0$

$4ax = 1 - 3a$

$Se\ a = 0:\ 0x = 1 \quad impossibile$

$Se\ a \neq 0:\ x = \frac{1-3a}{4a}$

2. $x(a^2 + 5x - 1) = a(a + 1) + 5x^2$

$a^2x + 5x^2 - x = a^2 + a + 5x^2$

$x\,(a^2 - 1) = a(a + 1)$

$x\,(a - 1)(a + 1) = a(a + 1)$

$Se\ a = -1:\quad 0x = 0 \quad indeterminata$

$Se\ a = 1:\quad 0x = 2 \quad impossibile$

$Se\ a \neq \pm 1:\quad x = \frac{a}{a-1}$

3. $2x\,(2a - 1) + bx = a\,(4x + 1)$

$4ax - 2x + bx = 4ax + a$

$(b - 2)x = a$

$Se\ b = 2\ e\ a = 0:\quad 0x = 0 \quad indeterminata$

$Se\ b = 2\ e\ a \neq 0:\quad 0x = a \quad impossibile$

$Se\ b \neq 2:\quad x = \frac{a}{b-2}$

4. $x - a = \frac{a + x}{2a} - 1$ $\qquad C.E.: a \neq 0$

$2ax - 2a^2 = a + x - 2a$

$2ax - x = 2a^2 - a$

$x\,(2a - 1) = a(2a - 1)$

$Se\ a = \frac{1}{2}:\quad 0x = 0 \quad indeterminata$

$Se\ a = 0:\quad l'equazione\ perde\ significato$

$Se\ a \neq 0\ e\ a \neq \frac{1}{2}:\quad x = a$