6. Solve the system of equations:

a) $\begin{cases} * \ y = (2x - 3) \\ 2x + 3(y) = 23 \end{cases}$

$y = 2(4) - 3$

$= 8 - 3$

$y = 5$

Solution $(4, 5)$

(x, y)

$2x + 3(2x - 3) = 23$

$2x + 6x - 9 = 23$

$8x - 9 = 23$

$+9 \quad +9$

$\frac{8x}{8} = \frac{32}{8}$

$x = 4$

7. Factor each expression:

a) $4x^2 - 49 = (2x + 7)(2x - 7) = 4x^2 - 14x + 14x - 49$

b) $4x^3 + 8x^2 - 32x = 4x(x^2 + 2x - 8)$ (ADD, MULT)

$= 4x(x + 4)(x - 2)$

c) $6x^2 - 5x - 6$ (MULT: $ac = -36$; ADD)

$= 6x^2 - 9x + 4x - 6$

$= 3x(2x - 3) + 2(2x - 3)$

$= (2x - 3)(3x + 2)$

[redacted]