2.2.5

a) $x^4 - 13x^2 + 36 = \underbrace{(x^2 - 4)}\underbrace{(x^2 - 9)}$

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

$y^2 - 13y + 36 = (y - 4)(y - 9)$

b) $a^6 + 19a^3 - 216 = (a^3 - 8)(a^3 + 27)$

$y^2 + 19y - 216 = (y - 8)(y + 27) = *$

$A^3 - B^3 = (A-B)(A^2 + AB + B^2)$

$A^3 + B^3 = (A+B)(A^2 - AB + B^2)$

$* = (a-2)(a^2 + 2a + 4)(a+3)(a^2 - 3a + 9)$

2.2.6

a) $ax + bx + ay + by = x(a+b) + y(a+b)$

$= (a+b)(x+y)$

méthode des groupements

g) $\frac{xy}{2} - \frac{x}{4} + \frac{yz}{3} - \frac{z}{6}$

$= \frac{x}{4}\left(\frac{2y}{1} - \frac{1}{1}\right) + \frac{z}{6}(2y - 1)$

$$= \frac{x}{4}(2y-1) + \frac{z}{6}(2y-1)$$

$$= (2y-1)\left(\frac{x}{4} + \frac{z}{6}\right)$$

$$\frac{x}{\cancel{4}_2} \cdot \frac{\cancel{2}^1 y}{1} = \frac{xy}{2}$$

2.2.5

h) $81z^4 + 80z^2 - 1 = (81z^2 - 1)(z^2 + 1)$

$81x^2 + 80x - 1 = (81x - 1)(x + 1)$