

$$\left(\frac{2}{3}a^2 + b^2\right)^3 + \left(\frac{2}{3}a^2 - b^2\right)^3 - \frac{4}{3}a^2\left(\frac{2}{3}a^2 + b^2\right)$$

$$\left(\frac{2}{3}a^2 - b^2\right) - \frac{10}{3}a^2b^4$$

$$\begin{aligned} & \frac{8}{27}a^6 + \cancel{b^6} + \cancel{\frac{4}{3}a^4b^2} + 2a^2b^4 + \frac{8}{27}a^6 - \cancel{b^6} + \\ & - \cancel{\frac{4}{3}a^4b^2} + 2a^2b^4 - \frac{4}{3}a^2\left(\frac{4}{9}a^4 - b^4\right) + \\ & - \frac{10}{3}a^2b^4 \end{aligned}$$

$$\cancel{\frac{16}{27}a^6} + \underbrace{4a^2b^4} - \underbrace{\frac{10}{3}a^2b^4} - \cancel{\frac{16}{27}a^6} + \underbrace{\frac{4}{3}a^2b^4}$$

$$\boxed{2a^2b^4}$$

OSS.

$$(3x^2 - 2y)(2y - 3x^2)$$

Sono opposti. Non è una differenza di quadrati.

$$-(-3x^2 + 2y)(2y - 3x^2)$$

$$-(-3x^2 + 2y)^2$$

$$\left[= -(3x^2 - 2y)^2 \right]$$

$$\left[\left(\frac{1}{3}x + \frac{2}{3}y \right)^3 - \frac{1}{9}xy(2x+4y) - \frac{8}{27}y^3 \right] \cdot 3x +$$

$$+ \left(\frac{1}{3}x^2 + y^2 \right) \left(y^2 - \frac{1}{3}x^2 \right)$$

$$\left[\frac{1}{27}x^3 + \frac{8}{27}y^3 + \frac{2}{9}x^2y + \frac{4}{9}xy^2 - \frac{2}{9}x^2y - \frac{4}{9}xy^2 - \frac{8}{27}y^3 \right] \cdot 3x + y^4 - \frac{1}{9}x^4$$

$$\frac{1}{9}x^4 + y^4 - \frac{1}{9}x^4 = y^4$$