

Calcola il valore delle seguenti espressioni applicando le proprietà delle potenze.

$$1 \quad \left\{ \left[3^2 \cdot \left(\frac{1}{3} \right)^3 \right]^{-1} \cdot 3^2 \right\} \cdot \left[\left(\frac{3}{2} \right)^3 \cdot \left(\frac{3}{2} \right)^{-6} \right]$$

$$2 \quad -(-3)^{-4} : 3^{-2} + 3^{-1} \cdot \left(-\frac{1}{3} \right)^2 + \left(-\frac{1}{3} \right)^3$$

$$3 \quad \left[\left(-\frac{3}{4} \right)^{-2} \right]^{-2} \cdot \left(\frac{4}{3} \right)^{-3} : \left(-\frac{3}{4} \right)^5 + \left[\left(-\frac{3}{4} \right)^5 : \left(\frac{4}{3} \right)^{-2} \right] \cdot \left(\frac{3}{4} \right)^{-3}$$

$$\left\{ \left[9 * \frac{1}{27} \right]^{-1} * 9 \right\} * \left[\left(\frac{3}{2} \right)^{-3} \right] =$$

$$\left\{ \left[\frac{1}{3} \right]^{-1} * 9 \right\} * \left[\left(\frac{2}{3} \right)^3 \right]$$

$$\{ 3^1 * 9 \} * \left[\frac{8}{27} \right]$$

$$27 * \frac{8}{27} = 8$$

$$- \left(-\frac{1}{3} \right)^4 : \left(\frac{1}{3} \right)^2 + \frac{1}{3} * \left(\frac{1}{9} \right) + \left(-\frac{1}{27} \right)$$

$$- \left(\frac{1}{81} \right) : \left(\frac{1}{9} \right) + \frac{1}{27} - \frac{1}{27}$$

$$- \frac{1}{81} * \frac{9}{1} = -\frac{1}{9}$$

$$\left[\left(-\frac{4}{3} \right)^2 \right]^{-2} * \left(\frac{3}{4} \right)^3 : \left(-\frac{3}{4} \right)^5 + \left[\left(-\frac{3}{4} \right)^5 : \left(\frac{3}{4} \right)^2 \right] * \left(\frac{4}{3} \right)^3$$

$$\left[\frac{9}{16}\right]^2 * \frac{27}{64} : \left(-\frac{243}{1024}\right) + \left[\left(-\frac{243}{1024}\right) : \frac{9}{16}\right] * \frac{64}{27} =$$

$$\frac{81}{256} * \frac{27}{64} * \left(-\frac{1024}{243}\right) + \left[\left(-\frac{243}{1024}\right) * \frac{16}{9}\right] * \frac{64}{27}$$

$$- \frac{9}{16} + \left[-\frac{27}{64}\right] * \frac{64}{27}$$

$$- \frac{9}{16} - 1 = \frac{-9 - 16}{16} = -\frac{25}{16}$$