

Numeri relativi. Espressioni con potenze e frazioni. Completi di soluzione guidata.
Signed Numbers

1. $-\frac{25}{3} \cdot \left(\frac{2}{5} - 1\right)^2 \cdot \left(\frac{5}{3} - 2\right)^2 + \left(\frac{1}{2} - 1\right)^2$

$\left[-\frac{1}{12}\right]$
[soluzione](#)
2. $\left[\left(-2 + \frac{8}{9}\right) : \left(-\frac{5}{3}\right)^2 - \frac{1}{3} + \left(-\frac{2}{3}\right)^3 \cdot \left(-\frac{9}{2}\right) \right] : \left[-\frac{1}{25} + \frac{3}{5} + \left(2 - \frac{6}{5}\right)^2 \right]$

$\left[\frac{1}{2}\right]$
[soluzione](#)
3. $\frac{1}{2} - \left(-\frac{1}{3}\right)^3 + \left\{ \left[\left(-4 - \frac{4}{3}\right) : \left(+\frac{16}{3}\right) + \frac{1}{5} \right]^2 - \left(-\frac{1}{9} - 1\right) \right\} \cdot \left(\frac{1}{9} - \frac{7}{15} + \frac{1}{45}\right)^3 - \frac{2}{3}$

$\left[-\frac{1}{6}\right]$
[soluzione](#)
4. $-\frac{16}{9} - \left\{ \left[\left(-\frac{8}{21} - 1 + \frac{5}{7}\right)^2 + \left(\frac{19}{10} - \frac{7}{5}\right)^3 - \frac{29}{72} \right] : \frac{12}{3} \right\} : \left(-\frac{3}{2}\right)$

$\left[-\frac{7}{4}\right]$
[soluzione](#)
5. $\left\{ \left[\left(-\frac{1}{3}\right)^2 \right]^2 : \left[\frac{1}{3} \cdot \left(-\frac{1}{3}\right)^3 : \left(-\frac{1}{3}\right)^2 \right]^2 \right\} : \left\{ - \left[\left(-\frac{2}{3}\right)^2 \cdot \left(\frac{3}{4}\right)^2 \right] \right\}$

$[-4]$
[soluzione](#)
6. $\left[\left(1 - \frac{1}{3}\right)^3 \cdot \left(\frac{3}{4}\right)^3 - \left(\frac{1}{2}\right)^3 + \left(\frac{1}{2}\right)^2 \right] - \left(\frac{3}{4} - 2\right)$

$\left[\frac{3}{2}\right]$
[soluzione](#)
7. $\left[\left(\frac{1}{2} - \frac{1}{5}\right)^3 + \left(1 + \frac{3}{4} - \frac{9}{10} - \frac{3}{20}\right)^3 - \left(-\frac{13}{100}\right) \right]^3 - \frac{1}{23} \cdot \left(3 + \frac{2}{3} - \frac{7}{4}\right)$

$\left[\frac{1}{24}\right]$
[soluzione](#)
8. $\left[\left(-\frac{3}{4}\right)^3 \right]^5 : \left[\left(-\frac{3}{4}\right)^3 \right]^4 \cdot \left\{ \left[\left(-\frac{3}{4}\right)^2 \right]^3 \right\}^0$

$\left[-\frac{27}{64}\right]$
[soluzione](#)
9. $\left[\left(-\frac{1}{3}\right)^2 : \left(-\frac{1}{6}\right)^2 \right] \cdot \left[\left(-\frac{1}{2}\right)^4 : \left(-\frac{1}{15} : \frac{4}{15}\right) \right] : \left[\left(-\frac{3}{2}\right)^2 + \left(-1 - \frac{1}{2}\right) \right]$

$\left[-\frac{4}{3}\right]$
[soluzione](#)
10. $\left\{ -\frac{15}{3} + \frac{3}{8} + \left(-\frac{1}{2}\right)^3 + \frac{9}{2} \right\} : \left[-\left(-\frac{2}{5}\right)^2 + \frac{3}{20} - \left(-\frac{1}{5}\right)^2 \right] - \frac{11}{2}$

$\left[-\frac{1}{2}\right]$
[soluzione](#)
11. $\left\{ \left[\left(-\frac{4}{5}\right)^3 \cdot \left(-\frac{4}{5}\right)^2 \right]^2 : \left(-\frac{4}{5}\right)^9 + \frac{4}{5} \right\} : \frac{6}{5} - 1 - \frac{2}{3}$

$\left[-\frac{5}{3}\right]$
[soluzione](#)

12. $-\frac{3}{5} - \left[\left(-\frac{3}{5}\right)^2 \right]^5 : \left[\left(-\frac{3}{5}\right)^6 \cdot \left(-\frac{3}{5}\right)^8 : \left(-\frac{3}{5}\right)^9 \right]^2$ $\left[-\frac{8}{5}\right]$
[soluzione](#)
13. $\left[\left(-\frac{1}{3}\right)^4 \left(-\frac{1}{3}\right)^2 : \left(-\frac{1}{3}\right)^3 \right]^5 : \left[\left(-\frac{1}{3}\right)^7 \left(-1 + \frac{2}{3}\right)^6 \right]$ $\left[\frac{1}{9}\right]$
[soluzione](#)
14. $\left\{ \left[-2 + \frac{3}{5^2} : \left(\frac{4}{5} - \frac{1}{2}\right)^2 \right]^3 + 1 : \left(-\frac{3}{2}\right)^2 \right\} : \left[1 : \left(\frac{5}{4} + \frac{1}{8} + \frac{5}{10}\right) \right] \cdot \left(-\frac{3}{5}\right)^2$ $\left[\frac{1}{10}\right]$
[soluzione](#)
15. $\left\{ \left[\left(-\frac{1}{2}\right)^2 \right]^2 - \left[\frac{1}{2} \cdot \left(-\frac{1}{2}\right)^3 : \left(-\frac{1}{2}\right)^2 \right]^2 \right\} : \left[\left(-\frac{2}{3}\right)^2 \cdot \left(\frac{3}{4}\right)^2 \right]$ $\left[-\frac{1}{2}\right]$
[soluzione](#)
16. $\left\{ \left[-2 + \frac{3}{5^2} : \left(\frac{4}{5} - \frac{1}{2}\right)^2 \right]^3 + 1 : \left(-\frac{3}{2}\right)^2 \right\} : \left[1 : \left(\frac{5}{4} + \frac{1}{8} + \frac{5}{10}\right) \right] \cdot \left(-\frac{3}{5}\right)^2$ $\left[-\frac{1}{10}\right]$
[soluzione](#)
17. $\left[\left(-\frac{2}{15}\right)^4 \left(+\frac{5}{2}\right)^4 : \left(-\frac{1}{3}\right)^2 \right]^2 : \left(-\frac{1}{3}\right)^3 - 1$ $\left[-\frac{4}{3}\right]$
[soluzione](#)
18. $\left[\left(\frac{25}{49}\right)^3 : \left(\frac{5}{7}\right)^3 : \left(\frac{5}{7}\right)^2 \right] : \left(-\frac{15}{14}\right)$ $\left[-\frac{2}{3}\right]$
19. $\left[\left(\frac{1}{4}\right)^4 : \left(\frac{2}{8}\right)^3 - \left(\frac{1}{2}\right)^2 \right] - 2^2$ $[-4]$
[soluzione](#)
20. $\left(-\frac{1}{2}\right)^0 + \left[\left(\frac{3}{2} - \frac{1}{4}\right)^2 - \left(\frac{1}{4} - 1\right)^2 \right] : \left(-\frac{3}{2}\right)^2 - \left(\frac{1}{9}\right)^1$ $\left[-\frac{4}{3}\right]$
[soluzione](#)
21. $\frac{1}{2} - \frac{25}{3} \cdot \left(\frac{2}{5} - 1\right)^2 + \left(1 + \frac{1}{2}\right)^1 + \left(\frac{1}{2} - 1\right)^2$ $\left[-\frac{3}{4}\right]$
[soluzione](#)
22. $\sqrt{(-2)^2 \cdot \left[\left(-\frac{1}{2} - \frac{3}{4}\right)^2 : \left(\frac{5}{4} - \frac{3}{2}\right)^2 - (-2)^4 \right]}$ $[6]$
[soluzione](#)
23. $\left(\frac{1}{2}\right)^0 + \left[\left(\frac{1}{4} - \frac{3}{2}\right)^2 - \left(\frac{1}{4} - 1\right)^2 \right] : \left(-\frac{3}{2}\right)^2 + \left(-\frac{1}{2}\right)^1$ $\left[\frac{17}{18}\right]$

Soluzioni

$$\begin{aligned}
& -\frac{25}{3} \cdot \left(\frac{2}{5} - 1\right)^2 \cdot \left(\frac{5}{3} - 2\right)^2 + \left(\frac{1}{2} - 1\right)^2 = \\
& = -\frac{25}{3} \cdot \left(\frac{2-5}{5}\right)^2 \cdot \left(\frac{5-6}{3}\right)^2 + \left(\frac{1-2}{2}\right)^2 = \\
& = -\frac{25}{3} \cdot \frac{9}{25} \cdot \frac{1}{9} + \frac{1}{4} = \\
& = -\frac{1}{3} + \frac{1}{4} = \\
& = \frac{-4+3}{12} = \\
& = -\frac{1}{12}
\end{aligned}$$

$$\begin{aligned}
& \left[\left(-2 + \frac{8}{9}\right) : \left(-\frac{5}{3}\right)^2 - \frac{1}{3} + \left(-\frac{2}{3}\right)^3 \cdot \left(-\frac{9}{2}\right) \right] : \left[-\frac{1}{25} + \frac{3}{5} + \left(2 - \frac{6}{5}\right)^2 \right] = \\
& = \left[\left(\frac{-18+8}{9}\right) : \left(\frac{25}{9}\right) - \frac{1}{3} + \left(-\frac{8}{27}\right) \cdot \left(-\frac{9}{2}\right) \right] : \left[-\frac{1}{25} + \frac{3}{5} + \left(\frac{10-6}{5}\right)^2 \right] = \\
& = \left[\left(-\frac{10}{9}\right) \cdot \left(\frac{9^1}{25^1}\right) - \frac{1}{3} + \left(-\frac{4}{27}\right) \cdot \left(-\frac{9^1}{2}\right) \right] : \left[-\frac{1}{25} + \frac{3}{5} + \frac{16}{25} \right] = \\
& = \left[-\frac{2}{5} - \frac{1}{3} + \frac{4}{3} \right] : \left[\frac{-1+15+16}{25} \right] = \\
& = \left[\frac{-6-5+20}{15} \right] : \left[\frac{-1+15+16}{25} \right] = \\
& = \left[\frac{{}^1_3 9}{{}_{13} 15} \right] \cdot \left[\frac{25^1}{30_{10_2}} \right] = \frac{1}{2}
\end{aligned}$$

$$\begin{aligned}
 & \frac{1}{2} - \left(-\frac{1}{3}\right)^3 + \left\{ \left[\left(-4 - \frac{4}{3}\right) : \left(+\frac{16}{3}\right) + \frac{1}{5} \right]^2 - \left(-\frac{1}{9} - 1\right) \right\}^0 \cdot \left(\frac{1}{9} - \frac{7}{15} + \frac{1}{45}\right)^3 - \frac{2}{3} = \\
 & = \frac{1}{2} - \left(-\frac{1}{27}\right) + 1 \cdot \left(\frac{5-21+1}{45}\right)^3 - \frac{2}{3} = \\
 & = \frac{1}{2} + \frac{1}{27} + 1 \cdot \left(\frac{-15}{45}\right)^3 - \frac{2}{3} = \\
 & = \frac{1}{2} + \frac{1}{27} + 1 \cdot \left(-\frac{1}{3}\right)^3 - \frac{2}{3} = \\
 & = \frac{1}{2} + \frac{1}{27} + 1 \cdot \left(-\frac{1}{27}\right) - \frac{2}{3} = \\
 & = \frac{1}{2} + \frac{1}{27} - \frac{1}{27} - \frac{2}{3} = \\
 & = \frac{1}{2} - \frac{2}{3} = \\
 & = \frac{3-4}{6} = -\frac{1}{6}
 \end{aligned}$$

$$\begin{aligned}
 & -\frac{16}{9} - \left\{ \left[\left(-\frac{8}{21} - 1 + \frac{5}{7} \right)^2 + \left(\frac{19}{10} - \frac{7}{5} \right)^3 - \frac{29}{72} \right] : \frac{12}{3} \right\} : \left(-\frac{3}{2} \right) = \\
 & = -\frac{16}{9} - \left\{ \left[\left(\frac{-8-21+15}{21} \right)^2 + \left(\frac{19-14}{10} \right)^3 - \frac{29}{72} \right] \cdot \frac{3}{12} \right\} \cdot \left(-\frac{2}{3} \right) = \\
 & = -\frac{16}{9} - \left\{ \left[\left(-\frac{14^2}{21_3} \right)^2 + \left(\frac{5^1}{10_2} \right)^3 - \frac{29}{72} \right] \cdot \frac{3}{12} \right\} \cdot \left(-\frac{2}{3} \right) = \\
 & = -\frac{16}{9} - \left\{ \left[\frac{4}{9} + \frac{1}{8} - \frac{29}{72} \right] \cdot \frac{3}{12} \right\} \cdot \left(-\frac{2}{3} \right) = \\
 & = -\frac{16}{9} - \left\{ \left[\frac{32+9-29}{72} \right] \cdot \frac{3}{12} \right\} \cdot \left(-\frac{2}{3} \right) = \\
 & = -\frac{16}{9} - \left\{ \left[\frac{112}{24 \cdot 72} \right] \cdot \frac{3^1}{12_1} \right\} \cdot \left(-\frac{2}{3} \right) = \\
 & = -\frac{16}{9} - \left\{ \frac{1}{24_{12}} \right\} \cdot \left(-\frac{2^1}{3} \right) = \\
 & = -\frac{16}{9} + \frac{1}{36} = \\
 & = \frac{-64+1}{9} = \\
 & = -\frac{63^{217}}{36_{12_4}} = -\frac{7}{4}
 \end{aligned}$$

$$\begin{aligned}
& \left\{ \left[\left(-\frac{1}{3} \right)^2 \right]^2 : \left[\frac{1}{3} \cdot \left(-\frac{1}{3} \right)^3 ; \left(-\frac{1}{3} \right)^2 \right]^2 \right\} : \left\{ - \left[\left(-\frac{2}{3} \right)^2 \cdot \left(\frac{3}{4} \right)^2 \right] \right\} = \\
& = \left\{ \left[\frac{1}{9} \right]^2 : \left[\frac{1}{3} \cdot \left(-\frac{1}{3} \right)^{3-2} \right]^2 \right\} : - \left\{ \left[\left(-\frac{2}{3} \cdot \frac{3}{4} \right)^2 \right] \right\} = \\
& = \left\{ \frac{1}{81} : \left[\frac{1}{3} \cdot \left(-\frac{1}{3} \right) \right]^2 \right\} : \left\{ - \left[\frac{1}{4} \right] \right\} = \\
& = \left\{ \frac{1}{81} : \left[-\frac{1}{9} \right]^2 \right\} \cdot [-4] = \\
& = \left\{ \frac{1}{81} : \frac{1}{81} \right\} \cdot [-4] = \\
& = 1 \cdot [-4] = -4
\end{aligned}$$

$$\begin{aligned}
& \left[\left(1 - \frac{1}{3} \right)^3 \cdot \left(\frac{3}{4} \right)^3 - \left(\frac{1}{2} \right)^3 + \left(\frac{1}{2} \right)^2 \right] - \left(\frac{3}{4} - 2 \right) = \\
& = \left[\left(\frac{3-1}{3} \right)^3 \cdot \left(\frac{3}{4} \right)^3 - \left(\frac{1}{2} \right)^3 + \left(\frac{1}{2} \right)^2 \right] - \left(\frac{3-8}{4} \right) = \\
& = \left[\left(\frac{2}{3} \right)^3 \cdot \frac{3 \cdot 3 \cdot 3}{4 \cdot 4 \cdot 4} - \frac{1}{8} + \frac{1}{4} \right] - \left(-\frac{5}{4} \right) = \\
& = \left[\frac{2 \cdot 2 \cdot 2}{3 \cdot 3 \cdot 3} \cdot \frac{3 \cdot 3 \cdot 3}{4 \cdot 4 \cdot 4} - \frac{1}{8} + \frac{1}{4} \right] - \left(-\frac{5}{4} \right) = \\
& = \left[\frac{1}{8} - \frac{1}{8} + \frac{1}{4} \right] - \left(-\frac{5}{4} \right) = \\
& = \frac{1}{4} + \frac{5}{4} = \\
& = \frac{6}{4} = \frac{3}{2}
\end{aligned}$$

$$\begin{aligned}
 & \left[\left(\frac{1}{2} - \frac{1}{5} \right)^3 + \left(1 + \frac{3}{4} - \frac{9}{10} - \frac{3}{20} \right)^3 - \left(-\frac{13}{100} \right) \right]^3 - \frac{1}{23} \cdot \left(3 + \frac{2}{3} - \frac{7}{4} \right) = \\
 & = \left[\left(\frac{5-2}{10} \right)^3 + \left(\frac{20+15-18-3}{20} \right)^3 + \frac{13}{100} \right]^3 - \frac{1}{23} \cdot \left(\frac{36+8-21}{12} \right) = \\
 & = \left[\left(\frac{3}{10} \right)^3 + \left(\frac{14^7}{20_{10}} \right)^3 + \frac{13}{100} \right]^3 - \frac{1}{23} \cdot \left(\frac{23}{12} \right) = \\
 & = \left[\frac{27}{1000} + \frac{343}{1000} + \frac{13}{100} \right]^3 - \frac{1}{12} = \\
 & = \left[\frac{27+343+130}{1000} \right]^3 - \frac{1}{12} = \\
 & = \left[\frac{500}{1000} \right]^3 - \frac{1}{12} = \\
 & = \left[\frac{1}{2} \right]^3 - \frac{1}{12} = \\
 & = \frac{1}{8} - \frac{1}{12} = \\
 & = \frac{3-2}{24} = \frac{1}{24}
 \end{aligned}$$

$$\begin{aligned}
 & \left[\left(-\frac{3}{4} \right)^3 \right]^5 : \left[\left(-\frac{3}{4} \right)^3 \right]^4 \cdot \left\{ \left[\left(-\frac{3}{4} \right)^2 \right]^3 \right\}^0 = \\
 & = \left(-\frac{3}{4} \right)^{3 \cdot 5} : \left(-\frac{3}{4} \right)^{3 \cdot 4} \cdot \left(-\frac{3}{4} \right)^{2 \cdot 3 \cdot 0} = \\
 & = \left(-\frac{3}{4} \right)^{15} : \left(-\frac{3}{4} \right)^{12} \cdot 1 = \\
 & = \left(-\frac{3}{4} \right)^{15-12} = \\
 & = \left(-\frac{3}{4} \right)^3 = \\
 & = -\frac{27}{64}
 \end{aligned}$$

$$\begin{aligned}
 & \left[\left(-\frac{1}{3} \right)^2 : \left(-\frac{1}{6} \right)^2 \right] \cdot \left[\left(-\frac{1}{2} \right)^4 : \left(-\frac{1}{15} : \frac{4}{15} \right) \right] : \left[\left(-\frac{3}{2} \right)^2 + \left(-1 - \frac{1}{2} \right) \right] = \\
 & = \left[\left(-\frac{1}{3} : \left(-\frac{1}{6} \right) \right)^2 \right] \cdot \left[\frac{1}{16} : \left(-\frac{1}{15} \cdot \frac{15}{4} \right) \right] : \left[\frac{9}{4} + \left(\frac{-2-1}{2} \right) \right] = \\
 & = \left[\left(\frac{1}{3} \cdot \frac{6}{1} \right)^2 \right] \cdot \left[\frac{1}{16} : \left(-\frac{1}{4} \right) \right] : \left[\frac{9}{4} - \frac{3}{2} \right] = \quad \text{---} = + \\
 & = 4 \cdot \left(-\frac{1}{4} \right) : \frac{3}{4} = \\
 & = -1 \cdot \frac{4}{3} = \\
 & = -\frac{4}{3}
 \end{aligned}$$

$$\begin{aligned}
 & \left\{ \left[-\frac{15}{3} + \frac{3}{8} + \left(-\frac{1}{2}\right)^3 + \frac{9}{2} \right] : \left[-\left(-\frac{2}{5}\right)^2 + \frac{3}{20} - \left(-\frac{1}{5}\right)^2 \right] \right\} - \frac{11}{2} = \\
 & = \left\{ \left[-5 + \frac{3}{8} - \frac{1}{8} + \frac{9}{2} \right] : \left[-\frac{4}{25} + \frac{3}{20} - \frac{1}{25} \right] \right\} - \frac{11}{2} = \\
 & = \left\{ \left[\frac{-40 + 3 - 1 + 36}{8} \right] : \left[\frac{-16 + 15 - 4}{100} \right] \right\} - \frac{11}{2} = \\
 & = \left\{ -\frac{2}{8} : \left(-\frac{5}{100_{20}}\right) \right\} - \frac{11}{2} = \\
 & = \left\{ -\frac{1}{4} \cdot \left(-\frac{20}{1}\right) \right\} - \frac{11}{2} = \\
 & = +5 - \frac{11}{2} = \\
 & = \frac{10 - 11}{2} = \\
 & = -\frac{1}{2}
 \end{aligned}$$

$$\begin{aligned}
 & \left\{ \left[\left(-\frac{4}{5}\right)^3 \cdot \left(-\frac{4}{5}\right)^2 \right]^2 : \left(-\frac{4}{5}\right)^9 + \frac{4}{5} \right\} : \frac{6}{5} - 1 - \frac{2}{3} = \\
 & = \left\{ \left(-\frac{4}{5}\right)^{(3+2) \cdot 2} : \left(-\frac{4}{5}\right)^9 + \frac{4}{5} \right\} \cdot \frac{5}{6} - 1 - \frac{2}{3} = \\
 & = \left\{ \left(-\frac{4}{5}\right)^{10-9} + \frac{4}{5} \right\} \cdot \frac{5}{6} - 1 - \frac{2}{3} = \\
 & = \left\{ -\frac{4}{5} + \frac{4}{5} \right\} \cdot \frac{5}{6} - 1 - \frac{2}{3} = \\
 & = 0 \cdot \frac{5}{6} - 1 - \frac{2}{3} = \\
 & = -1 - \frac{2}{3} = \\
 & = \frac{-3-2}{3} = \\
 & = -\frac{5}{3}
 \end{aligned}$$

$$\begin{aligned}
 & -\frac{3}{5} - \left[\left(-\frac{3}{5} \right)^{2 \cdot 5} \right] : \left[\left(-\frac{3}{5} \right)^6 \cdot \left(-\frac{3}{5} \right)^8 : \left(-\frac{3}{5} \right)^9 \right]^2 = \\
 & -\frac{3}{5} - \left(-\frac{3}{5} \right)^{2 \cdot 5} : \left[\left(-\frac{3}{5} \right)^{6+8-9} \right]^2 = \\
 & = -\frac{3}{5} - \left(-\frac{3}{5} \right)^{10} : \left[\left(-\frac{3}{5} \right)^5 \right]^2 = \\
 & = -\frac{3}{5} - \left(-\frac{3}{5} \right)^{10} : \left(-\frac{3}{5} \right)^{5 \cdot 2} = \\
 & = -\frac{3}{5} - \left(-\frac{3}{5} \right)^{10} : \left(-\frac{3}{5} \right)^{10} = \\
 & = -\frac{3}{5} - \left(-\frac{3}{5} \right)^{10-10} = \\
 & = -\frac{3}{5} - \left(-\frac{3}{5} \right)^0 = \\
 & = -\frac{3}{5} - 1 = \\
 & = \frac{-3-5}{5} = \\
 & = -\frac{8}{5}
 \end{aligned}$$

$$\begin{aligned}
 & \left[\left(-\frac{1}{3}\right)^4 \left(-\frac{1}{3}\right)^2 : \left(-\frac{1}{3}\right)^3 \right]^5 : \left[\left(-\frac{1}{3}\right)^7 \left(-1 + \frac{2}{3}\right)^6 \right] = \\
 & = \left[\left(-\frac{1}{3}\right)^{4+2-3} \right]^5 : \left[\left(-\frac{1}{3}\right)^7 \left(-\frac{1}{3}\right)^6 \right] = \\
 & = \left[\left(-\frac{1}{3}\right)^3 \right]^5 : \left[\left(-\frac{1}{3}\right)^7 \left(-\frac{1}{3}\right)^6 \right] = \\
 & = \left(-\frac{1}{3}\right)^{3 \cdot 5} : \left(-\frac{1}{3}\right)^{7+6} = \\
 & = \left(-\frac{1}{3}\right)^{15} : \left(-\frac{1}{3}\right)^{13} = \\
 & = \left(-\frac{1}{3}\right)^2 = \frac{1}{9}
 \end{aligned}$$

$$\begin{aligned}
& \left\{ \left[-2 + \frac{3}{5^2} : \left(\frac{4}{5} - \frac{1}{2} \right)^2 \right]^3 + 1 : \left(-\frac{3}{2} \right)^2 \right\} : \left[1 : \left(\frac{5}{4} + \frac{1}{8} + \frac{5}{10} \right) \right] \cdot \left(-\frac{3}{5} \right)^2 = \\
& = \left\{ \left[-2 + \frac{3}{25} : \left(\frac{8-5}{10} \right)^2 \right]^3 + 1 : \frac{9}{4} \right\} : \left[1 : \left(\frac{5}{4} + \frac{1}{8} + \frac{1}{2} \right) \right] \cdot \frac{9}{25} = \\
& = \left\{ \left[-2 + \frac{3}{25} : \left(\frac{3}{10} \right)^2 \right]^3 + \frac{4}{9} \right\} : \left[1 : \left(\frac{10+1+4}{8} \right) \right] \cdot \frac{9}{25} = \\
& = \left\{ \left[-2 + \frac{3}{25} : \frac{9}{100} \right]^3 + \frac{4}{9} \right\} : \frac{8}{15} \cdot \frac{9}{25} = \\
& = \left\{ \left[-2 + \frac{4}{3} \right]^3 + \frac{4}{9} \right\} \cdot \frac{15}{8} \cdot \frac{9}{25} = \\
& = \left\{ \left[\frac{-6+4}{3} \right]^3 + \frac{4}{9} \right\} \cdot \frac{3}{8} \cdot \frac{9}{5} = \\
& = \left\{ \left[-\frac{2}{3} \right]^3 + \frac{4}{9} \right\} \cdot \frac{27}{40} = \\
& = \left\{ -\frac{8}{27} + \frac{4}{9} \right\} \cdot \frac{27}{40} = \\
& = \left\{ \frac{-8+12}{27} \right\} \cdot \frac{27}{40} = \\
& = \frac{4}{27} \cdot \frac{27}{40} = \frac{1}{10}
\end{aligned}$$

$$\begin{aligned}
 & \left\{ \left[\left(-\frac{1}{2} \right)^2 \right]^2 - \left[\frac{1}{2} \cdot \left(-\frac{1}{2} \right)^3 \cdot \left(-\frac{1}{2} \right)^2 \right]^2 \right\} : - \left[\left(-\frac{2}{3} \right)^2 \cdot \left(\frac{3}{4} \right)^2 \right] = \\
 & = \left\{ \left[-\frac{1}{2} \right]^4 + \left[\frac{1}{2} \cdot \left(-\frac{1}{2} \right)^{3-2} \right]^2 \right\} : - \left\{ \left[\left(-\frac{2}{3} \cdot \frac{3}{4} \right)^2 \right] \right\} = \\
 & = \left\{ \frac{1}{16} + \left[\frac{1}{2} \cdot \left(-\frac{1}{2} \right) \right]^2 \right\} : - \left\{ \left[\frac{1}{4} \right] \right\} = \\
 & = \left\{ \frac{1}{16} + \left[-\frac{1}{4} \right]^2 \right\} \cdot [-4] = \\
 & = \left\{ \frac{1}{16} + \frac{1}{16} \right\} \cdot [-4] = \\
 & = \frac{2}{16} \cdot [-4] = -\frac{1}{2}
 \end{aligned}$$

$$\begin{aligned} & \left\{ \left[-2 + \frac{3}{5^2} \cdot \left(\frac{4}{5} - \frac{1}{2} \right)^2 \right]^3 + 1 \cdot \left(-\frac{3}{2} \right)^2 \right\} : \left[1 \cdot \left(\frac{5}{4} + \frac{1}{8} + \frac{5}{10} \right) \right] \cdot \left(-\frac{3}{5} \right)^2 = \\ & = \left\{ \left[-2 + \frac{3}{25} \cdot \left(\frac{8-5}{10} \right)^2 \right]^3 + 1 \cdot \frac{9}{4} \right\} : \left[1 \cdot \left(\frac{50+5+20}{40} \right) \right] \cdot \frac{9}{25} = \\ & = \left\{ \left[-2 + \frac{3}{25} \cdot \frac{100}{9} \right]^3 + \frac{4}{9} \right\} : \left[1 \cdot \left(\frac{75}{40} \right) \right] \cdot \frac{9}{25} = \\ & = \left\{ \left[-2 + \frac{4}{3} \right]^3 + \frac{4}{9} \right\} : \left[1 \cdot \left(\frac{15}{8} \right) \right] \cdot \frac{9}{25} = \\ & = \left\{ \left[\frac{-6+4}{3} \right]^3 + \frac{4}{9} \right\} : \left[\frac{8}{15} \right] \cdot \frac{9}{25} = \\ & = \left\{ \left[-\frac{2}{3} \right]^3 + \frac{4}{9} \right\} \cdot \frac{15}{8} \cdot \frac{9}{25} = \\ & = \left\{ -\frac{16}{27} + \frac{4}{9} \right\} \cdot \frac{3}{8} \cdot \frac{9}{5} = \\ & = \left\{ \frac{-16+12}{27} \right\} \cdot \frac{3}{8} \cdot \frac{9}{5} = \\ & = -\frac{4}{27} \cdot \frac{3}{8} \cdot \frac{9}{5} = -\frac{1}{10} \end{aligned}$$

$$\begin{aligned} & \left[\left(-\frac{2}{15} \right)^4 \left(+\frac{5}{2} \right)^4 : \left(-\frac{1}{3} \right)^{2 \cdot 2} \right]^2 : \left(-\frac{1}{3} \right)^3 - 1 = \\ & = \left[\left(-\frac{2}{15} \cdot \frac{5}{2} \right)^4 : \left(-\frac{1}{3} \right)^{2 \cdot 2} \right]^2 : \left(-\frac{1}{3} \right)^3 - 1 = \\ & = \left[\left(-\frac{1}{3} \right)^4 : \left(-\frac{1}{3} \right)^{2 \cdot 2} \right]^2 : \left(-\frac{1}{3} \right)^3 - 1 = \\ & = \left(-\frac{1}{3} \right)^{2 \cdot 2} \left(-\frac{1}{3} \right)^3 - 1 = \\ & = \left(-\frac{1}{3} \right)^{4-3} - 1 = \\ & = -\frac{1}{3} - 1 = \\ & = -\frac{4}{3} \end{aligned}$$

$$\begin{aligned} & \left[\left(\frac{25}{49} \right)^3 : \left(\frac{5}{7} \right)^3 : \left(\frac{5}{7} \right)^2 \right] : \left(-\frac{15}{14} \right) = \\ & = \left[\left(\frac{25}{49} : \frac{5}{7} \right)^3 : \left(\frac{5}{7} \right)^2 \right] \cdot \left(-\frac{15}{14} \right) = \\ & = \left[\left(\frac{5}{7} \right)^3 : \left(\frac{5}{7} \right)^2 \right] \cdot \left(-\frac{15}{14} \right) = \\ & = \left(\frac{5}{7} \right)^{3-2} \cdot \left(-\frac{15}{14} \right) = \\ & = \left(\frac{5}{7} \right)^1 \cdot \left(-\frac{15}{14} \right) = \\ & = \frac{5}{7} \cdot \left(-\frac{15}{14} \right) = \\ & = -\frac{2}{3} \end{aligned}$$


$$\begin{aligned} & \left[\left(\frac{1}{4} \right)^4 : \left(\frac{2}{8} \right)^3 - \left(\frac{1}{2} \right)^2 \right] - 2^2 = \\ & = \left[\left(\frac{1}{4} \right)^4 : \left(\frac{1}{4} \right)^3 - \frac{1}{4} \right] - 4 = \\ & = \left[\left(\frac{1}{4} \right)^{4-3} - \frac{1}{4} \right] - 4 = \\ & = \left[\frac{1}{4} - \frac{1}{4} \right] - 4 = \\ & = -4 \end{aligned}$$


$$\begin{aligned} & \left(-\frac{1}{2} \right)^0 + \left[\left(\frac{3}{2} - \frac{1}{4} \right)^2 - \left(\frac{1}{4} - 1 \right)^2 \right] : \left(-\frac{3}{2} \right)^2 - \left(\frac{1}{9} \right)^1 = \\ & = 1 + \left[\left(\frac{5}{4} \right)^2 - \left(-\frac{3}{4} \right)^2 \right] \cdot \frac{4}{9} - \frac{1}{9} = \\ & = 1 + \left[\frac{25}{16} - \frac{9}{16} \right] \cdot \frac{4}{9} - \frac{1}{9} = \\ & = 1 + \left[\frac{16}{16} \right] \cdot \frac{4}{9} - \frac{1}{9} = \\ & = 1 + \frac{4}{9} - \frac{1}{9} = \\ & = \frac{18 + 8 - 2}{18} = \\ & = \frac{24}{18} = \frac{4}{3} \end{aligned}$$


$$\begin{aligned} & \frac{1}{2} - \frac{25}{3} \cdot \left(\frac{2}{5} - 1\right)^2 + \left(1 + \frac{1}{2}\right)^1 + \left(\frac{1}{2} - 1\right)^2 = \\ & = \frac{1}{2} - \frac{25}{3} \cdot \left(\frac{2-5}{5}\right)^2 + \frac{3}{2} + \left(-\frac{1}{2}\right)^2 = \\ & = \frac{1}{2} - \frac{25}{3} \cdot \frac{9}{25} + \frac{3}{2} + \frac{1}{4} = \\ & = \frac{1}{2} - 3 + \frac{3}{2} + \frac{1}{4} = \\ & = \frac{2 - 12 + 6 + 1}{4} = -\frac{3}{4} \end{aligned}$$

$$\begin{aligned} & \sqrt{(-2)^2 \cdot \left[\left(-\frac{1}{2} - \frac{3}{4}\right)^2 : \left(\frac{5}{4} - \frac{3}{2}\right)^2 - (-2)^4\right]} = \\ & = \sqrt{4 \cdot \left[\left(\frac{-2-3}{4}\right)^2 : \left(\frac{5-6}{4}\right)^2 - 16\right]} = \\ & = \sqrt{4 \cdot \left[\left(-\frac{5}{4}\right)^2 : \left(\frac{1}{4}\right)^2 - 16\right]} = \\ & = \sqrt{4 \cdot \left[\frac{25}{16} \cdot 16 - 16\right]} = \\ & = \sqrt{4 \cdot [25 - 16]} = \\ & = \sqrt{4 \cdot 9} = 6 \end{aligned}$$

Keywords

 *Algebra, numeri relativi, relativi, numeri positivi, numeri negativi, valore assoluto, numeri reali, segno, Z , espressioni algebriche, esercizi con soluzioni, matematica*

 *Algebra, Z , signed numbers, integers, negative e non-negative numbers, real numbers, sign, exercises with solution, Algebraic Expressions solved, math*

 *Algebra, Z , nombre negativo, nombre positivo, signo, matemática*

 *Algèbre, Z , nombres relatifs, nombre négatifs, nombre positifs, nombres réels, mathématique*

 *Algebra, Z , Positive und Negative Zahlen, reellen Zahlen, Signum, Mathematik*