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

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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. $\frac{1}{2}-\left(-\frac{1}{3}\right)^3+\left\{\left[\left(-4-\frac{4}{3}\right):\left(+\frac{16}{3}\right)+\frac{1}{5}\right]^2-\left(-\frac{1}{9}-1\right)\right\}^0\cdot\left(\frac{1}{9}-\frac{7}{15}+\frac{1}{45}\right)^3-\frac{2}{3}$ $\left[-\frac{1}{6}\right]$ 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. $\left\{\left[-\frac{15}{3}+\frac{3}{8}+\left(-\frac{1}{2}\right)^3+\frac{9}{2}\right]:\left[-\left(-\frac{2}{5}\right)^2+\frac{3}{20}-\left(-\frac{1}{5}\right)^2\right]\right\}-\frac{11}{2}$ $\left[-\frac{1}{2}\right]$ 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. $0{,}5-8{,}\overline{3}\cdot(0{,}4-1)^2+(1{,}5)^3:(1{,}5)^2+(0{,}5-1)^2$ $\left[-\frac{3}{4}\right]$ 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

Soluzioni

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

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

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

$$=\frac{1}{2}-\left(-\frac{1}{27}\right)+1\cdot\left(\frac{5-21+1}{45}\right)^3-\frac{2}{3}=$$

$$=\frac{1}{2}+\frac{1}{27}+1\cdot\left(\frac{-15}{45}\right)^3-\frac{2}{3}=$$

$$=\frac{1}{2}+\frac{1}{27}+1\cdot\left(-\frac{1}{3}\right)^3-\frac{2}{3}=$$

$$=\frac{1}{2}+\frac{1}{27}+1\cdot\left(-\frac{1}{27}\right)-\frac{2}{3}=$$

$$=\frac{1}{2}+\frac{1}{27}-\frac{1}{27}-\frac{2}{3}=$$

$$=\frac{1}{2}-\frac{2}{3}=$$

$$=\frac{3-4}{6}=-\frac{1}{6}$$

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

$$=-\frac{16}{9}-\left\{\left[\left(\frac{-8-21+15}{21}\right)^2+\left(\frac{19-14}{10}\right)^3-\frac{29}{72}\right]\cdot\frac{3}{12}\right\}\cdot\left(-\frac{2}{3}\right)=$$

$$=-\frac{16}{9}-\left\{\left[\left(-\frac{\cancel{14}^{2}}{\cancel{21}_{3}}\right)^2+\left(\frac{\cancel{5}^{1}}{\cancel{10}_{2}}\right)^3-\frac{29}{72}\right]\cdot\frac{3}{12}\right\}\cdot\left(-\frac{2}{3}\right)=$$

$$=-\frac{16}{9}-\left\{\left[\frac{4}{9}+\frac{1}{8}-\frac{29}{72}\right]\cdot\frac{3}{12}\right\}\cdot\left(-\frac{2}{3}\right)=$$

$$=-\frac{16}{9}-\left\{\left[\frac{32+9-29}{72}\right]\cdot\frac{3}{12}\right\}\cdot\left(-\frac{2}{3}\right)=$$

$$=-\frac{16}{9}-\left\{\left[\frac{\cancel{12}^{1}}{\cancel{72}_{24}}\right]\cdot\frac{\cancel{3}^{1}}{\cancel{12}_{1}}\right\}\cdot\left(-\frac{2}{3}\right)=$$

$$=-\frac{16}{9}-\left\{\frac{1}{\cancel{24}_{12}}\right\}\cdot\left(-\frac{\cancel{2}^{1}}{3}\right)=$$

$$=-\frac{16}{9}+\frac{1}{36}=$$

$$=\frac{-64+1}{9}=-\frac{\cancel{63}^{\cancel{21}^{7}}}{\cancel{36}_{\cancel{12}_{4}}}=-\frac{7}{4}$$

$$\left\{\left[\left(-\frac{1}{3}\right)^2\right]^2:\left[\frac{1}{3}\cdot\left(-\frac{1}{3}\right)^3;\left(-\frac{1}{3}\right)^2\right]^2\right\}:\left\{-\left[\left(-\frac{2}{3}\right)^2\cdot\left(\frac{3}{4}\right)^2\right]\right\}=$$

$$=\left\{\left[\frac{1}{9}\right]^2:\left[\frac{1}{3}\cdot\left(-\frac{1}{3}\right)^{3-2}\right]^2\right\}:-\left\{\left[\left(-\frac{2}{3}\cdot\frac{3}{4}\right)^2\right]\right\}=$$

$$=\left\{\frac{1}{81}:\left[\frac{1}{3}\cdot\left(-\frac{1}{3}\right)\right]^2\right\}:\left\{-\left[\frac{1}{4}\right]\right\}=$$

$$=\left\{\frac{1}{81}:\left[-\frac{1}{9}\right]^2\right\}\cdot[-4]=$$

$$=\left\{\frac{1}{81}:\frac{1}{81}\right\}\cdot[-4]=$$

$$=1\cdot[-4]=-4$$

$$\left[\left(1-\frac{1}{3}\right)^3\cdot\left(\frac{3}{4}\right)^3-\left(\frac{1}{2}\right)^3+\left(\frac{1}{2}\right)^2\right]-\left(\frac{3}{4}-2\right)=$$

$$=\left[\left(\frac{3-1}{3}\right)^3\cdot\left(\frac{3}{4}\right)^3-\left(\frac{1}{2}\right)^3+\left(\frac{1}{2}\right)^2\right]-\left(\frac{3-8}{4}\right)=$$

$$=\left[\left(\frac{2}{3}\right)^3\cdot\frac{3\cdot3\cdot3}{4\cdot4\cdot4}-\frac{1}{8}+\frac{1}{4}\right]-\left(-\frac{5}{4}\right)=$$

$$=\left[\frac{2\cdot2\cdot}{3\cdot3\cdot3}\cdot\frac{3\cdot3\cdot3}{4\cdot4\cdot4}-\frac{1}{8}+\frac{1}{4}\right]-\left(-\frac{5}{4}\right)=$$

$$=\left[\frac{1}{8}-\frac{1}{8}+\frac{1}{4}\right]-\left(-\frac{5}{4}\right)=$$

$$=\frac{1}{4}+\frac{5}{4}=$$

$$=\frac{6}{4}=\frac{3}{2}$$

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

$$=\left[\left(\frac{5-2}{10}\right)^3+\left(\frac{20+15-18-3}{20}\right)^3+\frac{13}{100}\right]^3-\frac{1}{23}\cdot\left(\frac{36+8-21}{12}\right)=$$

$$=\left[\left(\frac{3}{10}\right)^3+\left(\frac{14^{7}}{20_{10}}\right)^3+\frac{13}{100}\right]^3-\frac{1}{23}\cdot\left(\frac{23}{12}\right)=$$

$$=\left[\frac{27}{1000}+\frac{343}{1000}+\frac{13}{100}\right]^3-\frac{1}{12}=$$

$$=\left[\frac{27+343+130}{1000}\right]^3-\frac{1}{12}=$$

$$=\left[\frac{500}{1000}\right]^3-\frac{1}{12}=$$

$$=\left[\frac{1}{2}\right]^3-\frac{1}{12}=$$

$$=\frac{1}{8}-\frac{1}{12}=$$

$$=\frac{3-2}{24}=\frac{1}{24}$$

$$\left[\left(-\frac{3}{4}\right)^3\right]^5:\left[\left(-\frac{3}{4}\right)^3\right]^4\cdot\left\{\left[\left(-\frac{3}{4}\right)^2\right]^3\right\}^0=$$

$$=\left(-\frac{3}{4}\right)^{3\cdot5}:\left(-\frac{3}{4}\right)^{3\cdot4}\cdot\left(-\frac{3}{4}\right)^{2\cdot3\cdot0}=$$

$$=\left(-\frac{3}{4}\right)^{15}:\left(-\frac{3}{4}\right)^{12}\cdot1=$$

$$=\left(-\frac{3}{4}\right)^{15-12}=$$

$$=\left(-\frac{3}{4}\right)^3=$$

$$=-\frac{27}{64}$$

$$\left[\left(-\frac{1}{3}\right)^2:\left(-\frac{1}{6}\right)^2\right]\cdot\left[\left(-\frac{1}{2}\right)^4:\left(-\frac{1}{15}:\frac{4}{15}\right)\right]:\left[\left(-\frac{3}{2}\right)^2+\left(-1-\frac{1}{2}\right)\right]=$$

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

$$=\left[\left(\frac{1}{3}\cdot\frac{6}{1}\right)^2\right]\cdot\left[\frac{1}{16}:\left(-\frac{1}{4}\right)\right]:\left[\frac{9}{4}-\frac{3}{2}\right]= \qquad -\cdot-=+$$

$$=4\cdot\left(-\frac{1}{4}\right):\frac{3}{4}=$$

$$=-1\cdot\frac{4}{3}=$$

$$=-\frac{4}{3}$$

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

$$=\left\{\left[-5+\frac{3}{8}-\frac{1}{8}+\frac{9}{2}\right]:\left[-\frac{4}{25}+\frac{3}{20}-\frac{1}{25}\right]\right\}-\frac{11}{2}=$$

$$=\left\{\left[\frac{-40+3-1+36}{8}\right]:\left[\frac{-16+15-4}{100}\right]\right\}-\frac{11}{2}=$$

$$=\left\{-\frac{2}{8}:\left(-\frac{5}{100_{20}}\right)\right\}-\frac{11}{2}=$$

$$=\left\{-\frac{1}{4}\cdot\left(-\frac{20}{1}\right)\right\}-\frac{11}{2}=$$

$$=+5-\frac{11}{2}=$$

$$=\frac{10-11}{2}=$$

$$=-\frac{1}{2}$$

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

$$=\left\{\left(-\frac{4}{5}\right)^{(3+2)\cdot 2}:\left(-\frac{4}{5}\right)^9+\frac{4}{5}\right\}\cdot\frac{5}{6}-1-\frac{2}{3}=$$

$$=\left\{\left(-\frac{4}{5}\right)^{10-9}+\frac{4}{5}\right\}\cdot\frac{5}{6}-1-\frac{2}{3}=$$

$$=\left\{-\frac{4}{5}+\frac{4}{5}\right\}\cdot\frac{5}{6}-1-\frac{2}{3}=$$

$$=0\cdot\frac{5}{6}-1-\frac{2}{3}=$$

$$=-1-\frac{2}{3}=$$

$$=\frac{-3-2}{3}=$$

$$=-\frac{5}{3}$$

$$-\frac{3}{5}-\left[\left(-\frac{3}{5}\right)^{2}\right]^{5}:\left[\left(-\frac{3}{5}\right)^{6}\cdot\left(-\frac{3}{5}\right)^{8}:\left(-\frac{3}{5}\right)^{9}\right]^{2}=$$

$$-\frac{3}{5}-\left(-\frac{3}{5}\right)^{2\cdot5}:\left[\left(-\frac{3}{5}\right)^{6+8-9}\right]^{2}=$$

$$=-\frac{3}{5}-\left(-\frac{3}{5}\right)^{10}:\left[\left(-\frac{3}{5}\right)^{5}\right]^{2}=$$

$$=-\frac{3}{5}-\left(-\frac{3}{5}\right)^{10}:\left(-\frac{3}{5}\right)^{5\cdot2}=$$

$$=-\frac{3}{5}-\left(-\frac{3}{5}\right)^{10}:\left(-\frac{3}{5}\right)^{10}=$$

$$=-\frac{3}{5}-\left(-\frac{3}{5}\right)^{10-10}=$$

$$=-\frac{3}{5}-\left(-\frac{3}{5}\right)^{0}=$$

$$=-\frac{3}{5}-1=$$

$$=\frac{-3-5}{5}=$$

$$=-\frac{8}{5}$$

$$\left[\left(-\frac{1}{3}\right)^4\left(-\frac{1}{3}\right)^2:\left(-\frac{1}{3}\right)^3\right]^5:\left[\left(-\frac{1}{3}\right)^7\left(-1+\frac{2}{3}\right)^6\right]=$$

$$=\left[\left(-\frac{1}{3}\right)^{4+2-3}\right]^5:\left[\left(-\frac{1}{3}\right)^7\left(-\frac{1}{3}\right)^6\right]=$$

$$=\left[\left(-\frac{1}{3}\right)^3\right]^5:\left[\left(-\frac{1}{3}\right)^7\left(-\frac{1}{3}\right)^6\right]=$$

$$=\left(-\frac{1}{3}\right)^{3\cdot5}:\left(-\frac{1}{3}\right)^{7+6}=$$

$$=\left(-\frac{1}{3}\right)^{15}:\left(-\frac{1}{3}\right)^{13}=$$

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

$$\left\{\left[-2+\frac{3}{5^2}:\left(\frac{4}{5}-\frac{1}{2}\right)^2\right]^3+1:\left(-\frac{3}{2}\right)^2\right\}:\left[1:\left(\frac{5}{4}+\frac{1}{8}+\frac{5}{10}\right)\right]\cdot\left(-\frac{3}{5}\right)^2=$$

$$=\left\{\left[-2+\frac{3}{25}:\left(\frac{8-5}{10}\right)^2\right]^3+1:\frac{9}{4}\right\}:\left[1:\left(\frac{5}{4}+\frac{1}{8}+\frac{1}{2}\right)\right]\cdot\frac{9}{25}=$$

$$=\left\{\left[-2+\frac{3}{25}:\left(\frac{3}{10}\right)^2\right]^3+\frac{4}{9}\right\}:\left[1:\left(\frac{10+1+4}{8}\right)\right]\cdot\frac{9}{25}=$$

$$=\left\{\left[-2+\frac{3}{25}:\frac{9}{100}\right]^3+\frac{4}{9}\right\}:\frac{8}{15}\cdot\frac{9}{25}=$$

$$=\left\{\left[-2+\frac{4}{3}\right]^3+\frac{4}{9}\right\}\cdot\frac{15}{8}\cdot\frac{9}{25}=$$

$$=\left\{\left[\frac{-6+4}{3}\right]^3+\frac{4}{9}\right\}\cdot\frac{3}{8}\cdot\frac{9}{5}=$$

$$=\left\{\left[-\frac{2}{3}\right]^3+\frac{4}{9}\right\}\cdot\frac{27}{40}=$$

$$=\left\{-\frac{8}{27}+\frac{4}{9}\right\}\cdot\frac{27}{40}=$$

$$=\left\{\frac{-8+12}{27}\right\}\cdot\frac{27}{40}=$$

$$=\frac{4}{27}\cdot\frac{27}{40}=\frac{1}{10}$$

$$\left\{\left[\left(-\frac{1}{2}\right)^2\right]^2-\left[\frac{1}{2}\cdot\left(-\frac{1}{2}\right)^3:\left(-\frac{1}{2}\right)^2\right]^2\right\}:-\left[\left(-\frac{2}{3}\right)^2\cdot\left(\frac{3}{4}\right)^2\right]=$$

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

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

$$=\left\{\frac{1}{16}+\left[-\frac{1}{4}\right]^2\right\}\cdot[-4]=$$

$$=\left\{\frac{1}{16}+\frac{1}{16}\right\}\cdot[-4]=$$

$$=\frac{2}{16}\cdot[-4]=-\frac{1}{2}$$

$$\left\{\left[-2+\frac{3}{5^2}:\left(\frac{4}{5}-\frac{1}{2}\right)^2\right]^3+1:\left(-\frac{3}{2}\right)^2\right\}:\left[1:\left(\frac{5}{4}+\frac{1}{8}+\frac{5}{10}\right)\right]\cdot\left(-\frac{3}{5}\right)^2=$$

$$=\left\{\left[-2+\frac{3}{25}:\left(\frac{8-5}{10}\right)^2\right]^3+1:\frac{9}{4}\right\}:\left[1:\left(\frac{50+5+20}{40}\right)\right]\cdot\frac{9}{25}=$$

$$=\left\{\left[-2+\frac{3}{25}\cdot\frac{100}{9}\right]^3+\frac{4}{9}\right\}:\left[1:\left(\frac{75}{40}\right)\right]\cdot\frac{9}{25}=$$

$$=\left\{\left[-2+\frac{4}{3}\right]^3+\frac{4}{9}\right\}:\left[1:\left(\frac{15}{8}\right)\right]\cdot\frac{9}{25}=$$

$$=\left\{\left[\frac{-6+4}{3}\right]^3+\frac{4}{9}\right\}:\left[\frac{8}{15}\right]\cdot\frac{9}{25}=$$

$$=\left\{\left[-\frac{2}{3}\right]^3+\frac{4}{9}\right\}\cdot\frac{15}{8}\cdot\frac{9}{25}=$$

$$=\left\{-\frac{16}{27}+\frac{4}{9}\right\}\cdot\frac{3}{8}\cdot\frac{9}{5}=$$

$$=\left\{\frac{-16+12}{27}\right\}\cdot\frac{3}{8}\cdot\frac{9}{5}=$$

$$=-\frac{4}{\cancel{27}}\cdot\frac{\cancel{3}}{8}\cdot\frac{\cancel{9}}{5}=-\frac{1}{10}$$

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

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

$$=\left[\left(-\frac{1}{3}\right)^4:\left(-\frac{1}{3}\right)^2\right]^2:\left(-\frac{1}{3}\right)^3-1=$$

$$=\left(-\frac{1}{3}\right)^{2\cdot2}\left(-\frac{1}{3}\right)^3-1=$$

$$=\left(-\frac{1}{3}\right)^{4-3}-1=$$

$$=-\frac{1}{3}-1=$$

$$=-\frac{4}{3}$$

$$\left[\left(\frac{25}{49}\right)^3:\left(\frac{5}{7}\right)^3:\left(\frac{5}{7}\right)^2\right]:\left(-\frac{15}{14}\right)=$$

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

$$=\left[\left(\frac{5}{7}\right)^3:\left(\frac{5}{7}\right)^2\right]\cdot\left(-\frac{15}{14}\right)=$$

$$=\left(\frac{5}{7}\right)^{3-2}\cdot\left(-\frac{15}{14}\right)=$$

$$=\left(\frac{5}{7}\right)^1\cdot\left(-\frac{15}{14}\right)=$$

$$=\frac{5}{7}\cdot\left(-\frac{15}{14}\right)=$$

$$=-\frac{2}{3}$$

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

$$= \left[\left(\frac{1}{4}\right)^4 : \left(\frac{1}{4}\right)^3 - \frac{1}{4}\right] - 4 =$$

$$= \left[\left(\frac{1}{4}\right)^{4-3} - \frac{1}{4}\right] - 4 =$$

$$= \left[\frac{1}{4} - \frac{1}{4}\right] - 4 =$$

$$= -4$$

$$\left(-\frac{1}{2}\right)^0 + \left[\left(\frac{3}{2} - \frac{1}{4}\right)^2 - \left(\frac{1}{4} - 1\right)^2\right] : \left(-\frac{3}{2}\right)^2 - \left(\frac{1}{9}\right)^1 =$$

$$= 1 + \left[\left(\frac{5}{4}\right)^2 - \left(-\frac{3}{4}\right)^2\right] \cdot \frac{4}{9} - \frac{1}{9} =$$

$$= 1 + \left[\frac{25}{16} - \frac{9}{16}\right] \cdot \frac{4}{9} - \frac{1}{9} =$$

$$= 1 + \left[\frac{16}{16}\right] \cdot \frac{4}{9} - \frac{1}{9} =$$

$$= 1 + \frac{4}{9} - \frac{1}{9} =$$

$$= \frac{18 + 8 - 2}{18} =$$

$$= \frac{24}{18} = \frac{4}{3}$$

$$0{,}5 - 8{,}\overline{3} \cdot (0{,}4 - 1)^2 + (1{,}5)^3 : (1{,}5)^2 + (0{,}5 - 1)^2 =$$

$$= \frac{5}{10} - \frac{83-8}{9} \cdot \left(\frac{4}{10} - 1\right)^2 + \left(\frac{15}{10}\right)^{3-2} + \left(\frac{5}{10} - 1\right)^2 =$$

$$= \frac{1}{2} - \frac{75}{9} \cdot \left(\frac{2}{5} - 1\right)^2 + \left(\frac{3}{2}\right)^1 + \left(\frac{1}{2} - 1\right)^2 =$$

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

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

$$= \frac{1}{2} - \frac{25}{3} \cdot \frac{9}{25} + \frac{3}{2} + \frac{1}{4} =$$

$$= \frac{1}{2} - 3 + \frac{3}{2} + \frac{1}{4} =$$

$$= \frac{2 - 12 + 6 + 1}{4} = -\frac{3}{4}$$

$$\sqrt{(-2)^2 \cdot \left[\left(-\frac{1}{2} - \frac{3}{4}\right)^2 : \left(\frac{5}{4} - \frac{3}{2}\right)^2 - (-2)^4\right]} =$$

$$= \sqrt{4 \cdot \left[\left(\frac{-2-3}{4}\right)^2 : \left(\frac{5-6}{4}\right)^2 - 16\right]} =$$

$$= \sqrt{4 \cdot \left[\left(-\frac{5}{4}\right)^2 : \left(\frac{1}{4}\right)^2 - 16\right]} =$$

$$= \sqrt{4 \cdot \left[\frac{25}{16} \cdot 16 - 16\right]} =$$

$$= \sqrt{4 \cdot [25 - 16]} =$$

$$= \sqrt{4 \cdot 9} = 6$$

Keywords

Algebra, numeri relativi, relativi, numeri postivi, 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