

Espressioni con le 4 operazioni e le potenze – Con soluzioni

Evaluating Expressions Involving Fractions – With solutions

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1. $\left[\left(\frac{3}{5}\right)^2\right]^4 \div \left(\frac{3}{5}\right)^6 =$ $\left[\frac{9}{25}\right]$
 2. $\left[\left(\frac{2}{7}\right)^2 \cdot \left(\frac{2}{7}\right)^3\right]^2 \div \left(\frac{2}{7}\right)^8 =$ $\left[\frac{4}{49}\right]$
 3. $\left[\left(\frac{2}{3}\right)^4 \cdot \left(\frac{2}{3}\right)^3\right]^2 \div \left(\frac{2}{3}\right)^{12} =$ $\left[\frac{4}{9}\right]$
 4. $\left[\left(\frac{1}{3}\right)^6 \div \left(\frac{1}{3}\right)^4\right]^2 \div \left[\left(\frac{1}{3}\right)^2 \cdot \left(\frac{1}{3}\right)^2\right] =$ $[1]$
 5. $\left[\left(\frac{4}{9}\right)^3 \div \left(\frac{2}{9}\right)^3\right]^2 \div \left[\left(\frac{9}{8}\right)^2 \cdot \left(\frac{16}{9}\right)^2\right]^3 =$ $[1]$
 6. $\left(1 - \frac{1}{2}\right)^4 \div \left\{\left[\left(\frac{3}{7} + \frac{1}{6} - \frac{5}{14}\right) \cdot \left(5 + \frac{1}{4}\right) - \frac{1}{2}\right]^3 \div \left(\frac{3}{4}\right)^2 - \frac{1}{4}\right\} - \frac{1}{2} =$ $[0]$
 7. $\left\{1 - \left[1 - \left(\frac{1}{3} + \frac{1}{6}\right)\right]\right\}^2 \cdot \left[2 - \left(\frac{1}{2} + \frac{7}{10}\right) \div 3\right]^2 \cdot \left(\frac{3}{4} + \frac{1}{2}\right)^2 =$ $[1]$
 8. $\left(3 - \frac{1}{4}\right) \div \left[\left(\frac{2}{5} + \frac{1}{2} - \frac{5}{6}\right)^2 \cdot \left(\frac{7}{5} + \frac{1}{10} + \frac{7}{2}\right)^2\right] \div \frac{9}{2} =$ $\left[\frac{11}{2}\right]$
 9. $\left(\frac{1}{2} + \left(\frac{1}{2} + \left(\frac{1}{2} + \frac{2}{6}\right) : \frac{10}{8}\right)\right) : \left(\frac{3}{2}\right)^2 - \left(\frac{1}{2}\right)^4 : \left(\frac{1}{2}\right)^3 =$ $\left[\frac{13}{54}\right]$
 10. $\left[\left(\frac{3}{2} - \frac{3}{4}\right)^3 \cdot \left(\frac{8}{9}\right)^2 + \left(\frac{2}{3} + \frac{1}{2} + \frac{1}{6}\right) \cdot \frac{3}{16}\right] \cdot \left(1 + \frac{1}{2}\right)^2 =$ $\left[\frac{3}{2}\right]$
 11. $\left[\left(\frac{15}{9} - \frac{1}{3}\right)^2 - \left(1 - \frac{1}{3}\right)^2 \div \frac{3}{9}\right] \div \left[\frac{16}{81} \div \frac{16}{27} + \left(\frac{1}{9}\right)^2 \div \frac{2}{30} + \frac{4}{27}\right] =$ $\left[\frac{2}{3}\right]$
 12. $\left[\left(\frac{3}{4}\right)^3 \div \left(\frac{3}{4}\right)^2 \div \left(\frac{3}{4}\right) - \left(2 - \frac{2}{3}\right)^2 \div \left(\frac{13}{6} + \frac{1}{2}\right) - \left(\frac{1}{7} - \frac{1}{21}\right)\right] \div \left(\frac{1}{3} + \frac{3}{4} - \frac{13}{84}\right) =$ $\left[\frac{10}{39}\right]$
 13. $\left\{\left[\left(\frac{2}{5}\right)^{10} \div \left(\frac{2}{5}\right)^6\right]^2 \cdot \left[\left(\frac{2}{5}\right)^8 \div \left(\frac{2}{5}\right)^3\right]\right\} \div \left[\left(\frac{2}{5}\right)^{10} \cdot \frac{2}{5}\right] =$ $\left[\frac{4}{25}\right]$
 14. $\left\{\left[\left(\frac{1}{3}\right)^4 \cdot \left(\frac{1}{3}\right)^2\right]^3 : \left(\frac{1}{3}\right)^9\right\} \div \left[\left(\frac{1}{3}\right)^3 \cdot \frac{1}{3}\right]^2 =$ $\left[\frac{1}{3}\right]$
 15. $\left[\left(\frac{3}{4}\right)^6 \div \left(\frac{3}{4}\right)^4\right]^3 \div \left[\frac{3}{4} \cdot \left(\frac{3}{4}\right)^2\right]^2 =$ $[1]$

16. $\left\{ \left[\left(1 + \frac{3}{4} - \frac{1}{2} \right)^2 - \left(2 - \frac{7}{4} \right)^2 \right] \div \left(\frac{5}{3} - \frac{1}{6} \right)^3 \right\}^2 \div \left(1 - \frac{5}{9} \right)^2 =$ [1]
17. $\frac{1}{2} + \left\{ \left[\left(1 + \frac{4}{3} \right)^4 \cdot \left(1 - \frac{2}{7} \right)^4 \right]^2 \right\}^6 \div \left\{ \left[\left(3 + \frac{2}{3} \right)^8 \div \left(1 + \frac{1}{2} + \frac{7}{10} \right)^8 \right]^2 \right\}^3 =$ $\left[\frac{3}{2} \right]$
18. $\left\{ \left[\left(\frac{1}{2} \right)^2 \right]^3 \cdot \left[\left(\frac{1}{2} \right)^3 \right]^3 \div \left[\left(\frac{1}{2} \right)^3 \right]^4 \right\}^3 \div \left[\left(\frac{1}{2} \right) \cdot \left(\frac{1}{2} \right)^3 \right]^2 =$ $\left[\frac{1}{2} \right]$
19. $\left\{ \left(\frac{1}{3} \right)^4 \cdot \left(\frac{1}{3} \right)^5 \div \left[\left(\frac{1}{3} \right)^2 \right]^4 \right\}^3 \div \left(\frac{1}{2} \right)^0 =$ $\left[\frac{1}{27} \right]$
20. $\left(1 + \frac{1}{2} \right)^2 \div \frac{5}{4} + \frac{9}{5} \cdot \left(2 - \frac{4}{3} \right)^2 - \left(2 - \frac{3}{5} \right) \cdot \frac{1}{7} - \left(1 - \frac{1}{2} \right)^3 \div \frac{5}{8} =$ $\left[\frac{11}{5} \right]$
21. $\left\{ \left[\left(\frac{7}{9} \right)^{14} \div \left(\frac{7}{9} \right)^{10} \right]^2 \div \left[\left(\frac{7}{9} \right)^3 \cdot \frac{7}{9} \cdot \left(\frac{7}{9} \right)^3 \right] \right\} \div \frac{7}{9} =$ [1]
22. $\left\{ \left[\left(\frac{19}{27} + 3 \right) \cdot \frac{16}{5} \right] \div \left[\frac{11}{18} \cdot \left(1 + \frac{31}{33} \right) \right] \right\}^2 \cdot \left(\frac{1}{10} \right)^2 + \left(\frac{1}{2} \right)^4 \div \left(\frac{1}{2} \right)^2 =$ $\left[\frac{3}{4} \right]$
23. $\left\{ \left(\frac{15}{2^4} + \frac{21}{2^5} - 1 \right) \div \left[\frac{3}{2^2} - \left(\frac{1}{2^3} + \frac{1}{2^4} \right) + \frac{5}{2^3 \cdot 3} \right] \right\} \div \frac{95}{74} + 2^2 =$ $\left[\frac{23}{5} \right]$
24. $\left\{ \left[\frac{15}{3} + \frac{3}{8} - \left(\frac{1}{2} \right)^3 - \frac{9}{2} \right] \div \left[\left(\frac{4}{5} \right)^2 + \frac{3}{20} - \left(\frac{1}{5} \right)^2 \right] \right\} - \left[\frac{19}{12} \div \left(\frac{3}{4} + \frac{5}{6} \right) \right] =$ [0]
25. $\left[\left(3 + \frac{1}{2} - \frac{5}{3} \right) \cdot \left(\frac{1}{2} \right)^2 \right] \div \left\{ \frac{3}{2} - \left[\frac{2}{3} + \left(\frac{2}{11} + \frac{5}{22} + \frac{7}{33} \right) \div \frac{82}{33} + \frac{1}{12} \right]^5 \right\}^3 \div \frac{1}{4} =$ $\left[\frac{44}{3} \right]$
26. $\left\{ \frac{15}{16} - \left[\left(\frac{3}{2} - \frac{1}{4} \right)^2 \div \frac{5}{4} - \left(\frac{1}{2} + \frac{1}{4} \right)^2 \right] \right\}^2 + \frac{1}{4} =$ $\left[\frac{5}{16} \right]$
27. $\left\{ 1 - \left[1 - \left(\frac{1}{6} + \frac{1}{3} \right) \right] \right\}^2 \cdot \left(\frac{1}{2} + \frac{3}{4} \right)^2 \cdot \left[2 - \frac{1}{3} \cdot \left(\frac{7}{10} + \frac{1}{2} \right) \right]^2 =$ [1]
28. $\left\{ \left[\left(\frac{1}{2} + \frac{1}{3} \right)^2 \div \left(1 + \frac{1}{4} \right)^2 \right] + \left[\left(\frac{4}{21} \div \frac{8}{7} + \frac{12}{7} \div \frac{3}{7} \right) \div \left(2 - \frac{7}{6} \right) \right] \right\} \div \left(\frac{7}{3} \right)^2 =$ [1]
29. $\left[\frac{1}{3} - \left(\frac{3}{5} - \frac{1}{10} \right)^2 \right] \cdot \frac{3}{5} \div \frac{1}{2} + \frac{7}{4} \div \frac{5}{2} - \frac{2^2}{5} =$ [0]
30. $\frac{10}{23} \cdot \left[\left(\frac{2}{7} \div 7 + \frac{5}{49} \right)^2 \div \frac{1}{7} - \left(\frac{1}{2} - \frac{1}{3} \right)^2 \div \frac{5}{6} \right] =$ $\left[\frac{1}{21} \right]$
31. $\left[\left(\frac{5}{8} - \frac{1}{8} \right)^4 - \left(\frac{2}{11} \cdot \frac{22}{3} - 1 \right)^4 \right] \div \left(\frac{1}{4} + \frac{1}{9} \right) \cdot \frac{6}{5} =$ $\left[\frac{1}{6} \right]$

- 32.** $\left[\left(\frac{7}{13} \cdot \frac{26}{21} \right)^3 - \left(\frac{7}{5} \div \frac{14}{5} \right)^3 \right] \div \left[\left(\frac{2}{3} \right)^2 + \frac{2}{3} \div 2 + \frac{1}{4} \right] = \left[\frac{1}{6} \right]$
- 33.** $\left[\left(\frac{1}{2} + \frac{3}{4} - 1 \right)^2 \div \frac{3}{16} + \frac{3}{2} + \left(\frac{1}{4} - \frac{1}{5} \right) \cdot \left(\frac{15}{3} \cdot 2^2 \right) \right] \div \frac{1}{3} = \left[\frac{17}{2} \right]$
- 34.** $\left(1 - \frac{3}{7} \right) \cdot \left[\frac{2}{29} \cdot \left(\frac{11}{5} - \frac{3}{4} \right) + \left(\frac{3}{20} + \frac{4}{15} - \frac{3}{8} \right) : \left(\frac{1}{3} - \frac{1}{4} \right)^2 \right] : \left(\frac{4}{5} \right)^2 + \left(1 - \frac{1}{2} \right)^2 = \left[\frac{9}{16} \right]$
- 35.** $\left[\left(2 + \frac{2}{3} \right) - \left(\frac{1}{3} + \frac{3}{4} - \frac{5}{6} \right) : \left(1 + \frac{1}{2} \right)^2 \right] : \left[\left(1 - \frac{2}{5} \right)^2 \cdot \left(\frac{5}{3} \right)^2 + \frac{7}{2} \cdot \left(\frac{1}{3} \right)^2 \right] = \left[\frac{46}{25} \right]$
- 36.** $\left[\left(\frac{1}{3} \right)^2 \div \left(\frac{1}{6} \right)^2 \right] \cdot \left[\left(\frac{1}{2} \right)^4 \div \left(\frac{1}{15} \div \frac{4}{15} \right) \right] : \left[\left(\frac{3}{2} \right)^2 - \left(1 - \frac{1}{2} \right) \right] = \left[\frac{4}{7} \right]$
- 37.** $\left\{ \left[\left(\frac{1}{6} + \frac{1}{4} \right)^2 \div \left(2 - \frac{1}{3} \right) + \frac{5}{12} - \frac{1}{2} \right] : \left(\frac{1}{4} \right)^2 - \frac{1}{3} \right\} + \frac{1}{4} = \left[\frac{1}{4} \right]$
- 38.** $\left(\frac{1}{3} - \frac{7}{33} \right)^2 : \left(\frac{1}{11} \right)^2 - \left(\frac{11}{9} \right)^4 : \left(\frac{11}{9} \right)^3 = \left[\frac{5}{9} \right]$
- 39.** $\left\{ \left[\left(\frac{5}{3} \right)^2 \cdot \left(1 - \frac{1}{2} \right) \cdot \left(1 + \frac{1}{5} \right)^2 \cdot \left(1 + \frac{1}{2} \right) - \frac{3}{4} \right] : \left(\frac{5}{2} \right)^2 - \left(\frac{1}{5} \right)^2 \right\} : \left[\left(\frac{2}{5} \right)^3 : \left(\frac{2}{5} \right)^2 \right] - \frac{1}{20} = \left[\frac{3}{4} \right]$
- 40.** $\left[\left(1 - \frac{2}{7} \right) \cdot \left(\frac{2}{7} + \frac{19}{7} \right) : \left(1 - \frac{4}{7} \right) + \left(3 - \frac{4}{3} \right)^2 + \left(2 - \frac{1}{2} \right)^2 \right] : \left(3 + \frac{1}{6} \right)^2 + \left(5 - \frac{7}{2} \right)^2 - \left(7 - \frac{13}{2} \right)^2 = \left[3 \right]$
- 41.** $\left\{ \frac{2}{3} - \left[\left(\frac{1}{2^3} + \frac{1}{2^2} \right) \cdot \frac{2}{3} \right] \right\} \div \left[3 + \left(\frac{1}{3} \right)^4 : \left(\frac{1}{3} \right)^3 \right] + \left[\left(\frac{1}{3} \right)^0 + \left(\frac{1}{3} \right)^5 : \left(\frac{1}{3} \right)^4 \right] \cdot \left(\frac{1}{2} \right)^3 = \left[\frac{7}{24} \right]$
- 42.** $\left(3 - \frac{10}{7} \right) : \left[\left(1 + \frac{1}{2} \right) - \left(1 - \frac{1}{3} \right)^2 \cdot \left(\frac{3}{20} + \frac{6}{35} \right) \right] : 3 = \left[1 \right]$
- 43.** $\left[\frac{5^2}{90} \cdot \left(\frac{2}{5} \right)^3 : \left(\frac{2}{5} \right)^2 + \frac{1}{2} \cdot \left(\frac{1}{3} \right)^4 : \left(\frac{1}{3} \right)^3 \right] : \left(1 + \frac{2}{3} - \frac{11}{3^2} \right)^2 = \left[\frac{5}{8} \right]$
- 44.** $\left[\left(\frac{1}{3} \right)^3 : \left(\frac{1}{3} \right)^2 \cdot \left(\frac{1}{3} + \frac{1}{2} \right) : 5 + \left(\frac{1}{9} \right)^4 : \left(\frac{1}{9} \right)^3 \right] \cdot \frac{1}{3} + \frac{5}{6} - \left(1 - \frac{2}{3} \right)^2 = \left[\frac{7}{9} \right]$