Espressioni con le quattro operazioni e le potenze di frazioni

[U6.8 ▸ p. 336]

RICORDA

- Nel calcolare il **valore** di un'**espressione** con le frazioni si eseguono prima le potenze, poi le moltiplicazioni e le divisioni nell'ordine in cui sono indicate e infine le addizioni e le sottrazioni, anch'esse nell'ordine in cui sono scritte.
- Se nell'espressione compaiono le **parentesi**, si risolvono prima le operazioni tra parentesi tonde, poi quelle tra parentesi quadre e infine quelle tra parentesi graffe.

Calcola il valore delle seguenti espressioni.

373 $\frac{1}{3}+\frac{5}{8}\times\left(\frac{2}{3}\right)^2-\frac{3}{2}\times\frac{1}{6}+\frac{35}{12}:\frac{21}{8}-\frac{53}{6^2}$ [0]

374 $\left(\frac{3}{2}-\frac{1}{6}+\frac{2}{3}\right)^2-\left(1-\frac{1}{3}\right)^2$ $\left[\frac{32}{9}\right]$

375 $\left(\frac{7}{5}-\frac{3}{10}-\frac{1}{2}\right)^4:\left[\left(\frac{3}{5}\right)^2\right]^2$ [1]

376 $\left(\frac{7}{6}-\frac{3}{8}-\frac{5}{9}\right)-\left(\frac{1}{4}+\frac{1}{2}-\frac{1}{3}\right)^2$ $\left[\frac{1}{16}\right]$

377 $\frac{4}{5}\times\left(\frac{3}{2}-\frac{10}{9}\times\frac{3}{5}\right)+\frac{7}{6}:\left(\frac{3}{2}\times\frac{1}{12}+\frac{3}{4}\right)+\left(\frac{1}{2}\right)^3$ $\left[\frac{17}{8}\right]$

378 $\frac{1}{2}-\left(\frac{1}{2}\right)^2-\left[\left(\frac{1}{5}\right)^2+\frac{3}{10}-\frac{1}{5}\right]-\frac{1}{10}$ $\left[\frac{1}{100}\right]$

379 $\left[\left(\frac{6}{5}-\frac{1}{2}+\frac{4}{3}-2\right)\times 2\right]^3:\left(\frac{5}{12}\times\frac{4}{25}-\frac{4}{7}\times\frac{7}{12}\right)^2$ $\left[\frac{1}{15}\right]$

380 $\left[\frac{1}{5}\times\frac{10}{3}\times\left(1-\frac{1}{2}\right)^3-\left(\frac{1}{4}\right)^3:\left(3-\frac{5}{2}\right)^2\right]+\left(\frac{3}{2}-\frac{2}{3}\right)$ $\left[\frac{41}{48}\right]$

381 $\left[\left(\frac{7}{15}+\frac{3}{10}\right)\times\frac{15}{23}-\left(2-\frac{5}{4}\right)^2\times\left(\frac{2}{3}\right)^3\right]^4\times\left(1+\frac{1}{2}\right)^4$ $\left[\frac{1}{16}\right]$

382 $\left[\left(\frac{3}{2}\right)^2-\left(\frac{7}{2}-\frac{4}{5}\right)\times\frac{1}{2}\right]:\left[\left(9-\frac{13}{2}\right)^2-\frac{5}{2}\right]\overset{!}{=}\left(\frac{1}{5}\right)^2$ $\left[\frac{1}{5}\right]$

383 $\left(1-\frac{7}{12}\right):\left[\left(\frac{1}{4}+\frac{3}{16}-\frac{3}{8}\right)^2:\frac{9}{8^2}+\left(\frac{1}{6}+\frac{5}{8}-\frac{3}{4}\right)\times\frac{2^3}{3}\right]-\left(\frac{1}{3}+1\right)^2$ $\left[\frac{11}{9}\right]$

384 $\left\{\left[\left(1+\frac{1}{3}\right)^2\times\left(\frac{3}{4}\right)^2+\frac{6}{21}+\frac{11}{6}:\left(1+\frac{1}{6}\right)\right]:\frac{3}{14}\times\frac{1}{10}\right\}^3$ $\left[\frac{64}{27}\right]$

25 $\frac{19}{20}-\left\{\left[\frac{1}{4}+\frac{2}{5}+\left(\frac{3}{5}-\frac{1}{2}+1\right)\right]-\frac{3}{10}-\frac{4}{5}\right\}-\frac{1}{5}$

26 $\frac{13}{10}+\frac{11}{6}-\left\{\frac{23}{15}-\frac{7}{12}+\left[\frac{4}{3}+\frac{3}{20}-\frac{11}{12}\right]\right\}-\frac{3}{4}$

27 $\frac{2}{3}+\left(\frac{11}{6}-\frac{2}{15}\right)-\left[\left(\frac{7}{30}+\frac{2}{5}-\frac{1}{6}\right)+\left(4-\frac{3}{5}\right)-\frac{5}{2}\right]$

28 $\frac{7}{9}-\left\{\frac{4}{3}-\left[\frac{3}{2}-\left(\frac{5}{18}+\frac{4}{3}-1\right)-\left(1-\frac{5}{6}\right)\right]\right\}$

29 $\left\{5-\frac{7}{12}-\left[2-\left(\frac{5}{4}+\frac{7}{6}-\frac{11}{12}\right)-\frac{1}{3}+\frac{1}{2}\right]+\left(\frac{2}{3}+\frac{5}{4}+\frac{17}{6}\right)\right\}-\left(\frac{4}{3}+\frac{1}{6}\right)$

30 $\frac{1}{3}+\frac{2}{9}-\left\{\left(6-\frac{4}{5}\right)-\left[\left(\frac{7}{2}-\frac{3}{5}-\frac{2}{3}\right)+\left(\frac{4}{9}+\frac{3}{10}\right)\right]-\frac{17}{10}\right\}+\left(\frac{5}{3}-\frac{6}{5}-\frac{4}{15}\right)$

31 $\left\{\left[\left(\frac{5}{3}-\frac{3}{4}+\frac{1}{2}\right)+\left(\frac{3}{2}+\frac{4}{3}\right)-\frac{7}{18}\right]+\frac{1}{3}-\frac{1}{4}\right\}-\left(2+\frac{5}{6}\right)$

32 $\left[\left(\frac{17}{4}-\frac{3}{5}-\frac{5}{2}\right)+\frac{3}{10}-\frac{1}{2}+\left(1-\frac{1}{4}\right)\right]+\left[\left(\frac{8}{5}-\frac{3}{4}\right)+\frac{3}{2}\right]+\frac{1}{5}$

33 $\left(\frac{23}{15}\times\frac{5}{23}+\frac{1}{18}\right)+\left\{\frac{13}{5}-\left[\frac{17}{9}\times\left(\frac{5}{3}+\frac{1}{5}-6\times\frac{1}{9}\right)-\frac{13}{6}\right]\right\}+\left[\frac{4}{9}+\left(\frac{5}{6}-\frac{2}{3}\right)\right]$

34 $\left\{\left[\frac{3}{2}-\left(\frac{7}{5}-\frac{1}{3}+\frac{1}{5}\times\frac{2}{5}\right)-\left(\frac{11}{15}+\frac{8}{5}-2\right)\right]\times\left(\frac{32}{9}+2\right)\right\}\times\frac{3}{5}$

35 $\left\{\frac{8}{3}+\left[\left(\frac{2}{9}+\frac{4}{3}-\frac{1}{6}\right)\times\frac{9}{5}-\frac{7}{5}\times\left(\frac{3}{4}+\frac{11}{12}-\frac{5}{6}\right)\right]\right\}:\left(\frac{1}{3}+\frac{1}{6}\right)$

36 $\frac{9}{4}-\left\{\frac{11}{12}+\left[\left(\frac{15}{8}-\frac{3}{4}+\frac{1}{3}\right):\frac{7}{12}+\left(\frac{3}{2}+\frac{1}{4}-\frac{7}{6}\right)\right]:\frac{37}{6}\right\}\times\frac{16}{17}+\frac{1}{12}$

37 $\left[\left(\frac{3}{4}-\frac{5}{8}\right):\left(\frac{2}{3}\right)^2\right]\times\left[\frac{5}{8}:\left(\frac{3}{4}\right)^2\right]:\left(\frac{1}{2}\right)^4$

38 $\left[\frac{6}{29}\times\left(\frac{3}{8}+\frac{5}{6}\right)+\frac{3}{10}\right]^2:\left(3-\frac{49}{20}\right)$

39 $\left[\left(\frac{5}{4}-1\right)^2+\left(\frac{1}{6}+\frac{4}{3}\right)^2-\left(1+\frac{1}{16}\right)\right]:\left(\frac{3}{8}-\frac{1}{4}\right)$

40 $\left\{\left[\left(\frac{2}{5}+\frac{7}{6}\times\frac{2}{14}-\frac{1}{3}\right)\times\frac{15}{7}+\frac{1}{2}\right]-\left[1-\left(\frac{2}{3}-\frac{1}{5}\right)^2:\frac{14}{5}\right]-\frac{1}{45}\right\}^2+\frac{11}{36}$

41 $\left[\frac{4}{5}\times\left(\frac{1}{8}+\frac{1}{3}:\frac{2}{9}\right)+\left(\frac{1}{9}+\frac{1}{3}:\frac{4}{5}\right):\left(\frac{1}{6}\right)^2\right]:\left[\left(\frac{3}{8}+\frac{1}{2}\right)^2:\frac{21}{4}+\frac{11}{24}\right]-\frac{8}{5}$