

5 Le espressioni contenenti frazioni

- 199 **A mente** Calcola velocemente il valore delle seguenti espressioni.

$$\left(\frac{312}{23} \cdot \frac{72}{25} + \frac{325}{4}\right) : \frac{1}{3} = \dots \quad \left(\frac{8}{3} \cdot \frac{3}{8}\right)^2 + \left(\frac{5}{4} : \frac{5}{4}\right)^3 = \dots \quad \left(\frac{2}{5}\right)^3 \cdot \left(\frac{2}{5}\right)^4 : \left(\frac{2}{5}\right)^6 - \frac{2}{5} = \dots$$

- 200 **Associa** Collega con una freccia ogni espressione al suo valore.

$$\frac{15}{16} : \left(\frac{3}{4} + \frac{5}{12} - \frac{13}{24}\right)$$

$$10 \cdot \left(\frac{11}{8} - \frac{3}{4}\right)$$

$$\left(2 + \frac{1}{3} + \frac{2}{6}\right)^2$$

$$\left(4 - \frac{6}{5} - \frac{14}{5}\right)^2$$

0

 $\frac{25}{4}$
 $\frac{64}{9}$
 $\frac{3}{2}$

- 201 **Caccia all'errore** Zoe e Chloé svolgono due espressioni, ma una di loro compie un errore. Trovalo e correggi il procedimento.

Zoe

$$\begin{aligned} \left(\frac{13}{5} - \frac{1}{2} + \frac{3}{2}\right)^2 &= \\ &= \left(\frac{13}{5} - \frac{4}{2}\right)^2 = \\ &= \left(\frac{13}{5} - 2\right)^2 = \\ &= \left(\frac{3}{5}\right)^2 = \frac{9}{25} \end{aligned}$$


Chloé

$$\begin{aligned} \left(1 + \frac{3}{4} \cdot \frac{2}{21}\right) : 5 &= \\ &= \left(1 + \frac{1}{14}\right) : 5 = \\ &= \frac{15}{14} \cdot \frac{1}{5} = \\ &= \frac{3}{14} \end{aligned}$$



- 202 **Chi ha ragione?** Quattro ragazze si chiedono quale sia il procedimento per risolvere la seguente espressione:

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

Letizia: «Bisogna calcolare le due potenze, poi si calcola la sottrazione tra 5 e la prima potenza, e poi si moltiplica per la seconda potenza.»

Cecilia: «Prima moltiplico le potenze applicando la proprietà: mantengo uguale la frazione e sommo gli esponenti; poi calcolo la potenza che ho ottenuto e infine trovo la differenza tra 5 e questa potenza.»

Virginia: «Calcolo il quadrato e il cubo di $\frac{1}{2}$, li moltiplico tra loro e poi trovo la differenza tra 5 e il prodotto ottenuto.»

Emilia: «Sottraggo 5 al prodotto del cubo e del quadrato di $\frac{1}{2}$.»

Chi ha ragione? Indicalo con una crocetta.

Letizia Cecilia Virginia Emilia

Senza parentesi Completa i passaggi per risolvere le seguenti espressioni senza parentesi.

203 $\frac{25}{36} \cdot \frac{25}{48} + \frac{2}{3} =$
 $= \frac{25}{36} \cdot \frac{\dots}{\dots} + \frac{2}{3} =$
 $= \frac{\dots}{\dots} + \frac{2}{3} = \frac{6}{3} = \dots$

204 $\frac{15}{22} \cdot \frac{33}{20} \cdot \frac{2}{3} - \frac{1}{2} : 2 =$
 $= \frac{\dots}{\dots} - \frac{1}{2} \cdot \frac{\dots}{\dots} =$
 $= \frac{\dots}{\dots} - \frac{1}{4} = \frac{\dots}{4} = \dots$

Senza parentesi né potenze Risolvi le seguenti espressioni.

$$\# 205 \quad \frac{3}{5} \cdot \frac{45}{7} + \frac{3}{14} \qquad \frac{5}{36} \cdot \frac{18}{35} + \frac{6}{7} \qquad \frac{7}{8} \cdot \frac{2}{3} \cdot 6 + \frac{1}{4} \qquad \left[\frac{57}{14}, \frac{13}{14}, \frac{15}{4} \right]$$

$$\# 206 \quad \frac{16}{21} - \frac{2}{3} \cdot \frac{5}{7} \qquad \frac{1}{2} + \frac{20}{15} \cdot \frac{5}{4} + \frac{1}{6} \qquad \frac{3}{2} + \frac{35}{11} \cdot \frac{33}{28} - \frac{5}{4} \qquad \left[\frac{2}{7}, \frac{7}{3}, 4 \right]$$

$$\# 207 \quad \frac{15}{8} \cdot \frac{12}{10} - \frac{35}{22} \cdot \frac{28}{11} \qquad \frac{4}{7} \cdot \frac{8}{7} + \frac{3}{2} \cdot \frac{4}{15} \qquad \frac{1}{2} \cdot \frac{2}{3} + \frac{20}{15} \cdot \frac{4}{5} \qquad \left[\frac{13}{8}, \frac{9}{10}, 2 \right]$$

$$\# 208 \quad \frac{9}{14} \cdot \frac{6}{35} - \frac{15}{8} \cdot \frac{12}{10} \qquad \frac{15}{4} \cdot \frac{14}{30} + \frac{3}{4} \cdot \frac{3}{2} \qquad \frac{33}{21} \cdot \frac{7}{49} + \frac{11}{6} - 1 \qquad \left[\frac{3}{2}, \frac{9}{4}, \frac{71}{6} \right]$$

$$\# 209 \quad \frac{7}{10} \cdot \frac{5}{14} + \frac{7}{8} \cdot \frac{2}{28} \qquad \frac{4}{3} + \frac{4}{7} \cdot \frac{5}{6} - \frac{1}{7} \qquad \frac{25}{12} \cdot \frac{4}{5} - \frac{3}{2} + \frac{12}{5} \cdot \frac{10}{9} - \frac{1}{12} \qquad \left[\frac{5}{16}, \frac{5}{3}, \frac{11}{4} \right]$$

Proprietà distributiva Risolvi le seguenti espressioni in due modi, come nell'esercizio guida.

ESERCIZIO GUIDA

$$\# 210 \quad \text{a. } \frac{7}{3} \cdot \left(\frac{9}{14} + \frac{1}{7} \right)$$

Primo metodo. Calcoliamo la somma tra parentesi e poi moltiplichiamo:

$$\frac{7}{3} \cdot \left(\frac{9}{14} + \frac{1}{7} \right) = \frac{7}{3} \cdot \left(\frac{9+2}{14} \right) = \frac{7}{3} \cdot \frac{11}{14} = \frac{11}{6}$$

Secondo metodo. Applichiamo la proprietà distributiva, moltiplicando $\frac{7}{3}$ per ciascuno dei due addendi e poi sommando i risultati:

$$\frac{7}{3} \cdot \left(\frac{9}{14} + \frac{1}{7} \right) = \frac{7^1}{3^1} \cdot \frac{9^3}{14^2} + \frac{7^1}{3^1} \cdot \frac{1}{7^1} = \frac{3}{2} + \frac{1}{3} = \frac{9+2}{6} = \frac{11}{6}$$

$$\text{b. } \left(\frac{2}{5} - \frac{3}{10} \right) : \frac{11}{15}$$

Primo metodo. Calcoliamo la differenza tra parentesi e poi dividiamo:

$$\left(\frac{2}{5} - \frac{3}{10} \right) : \frac{11}{15} = \left(\frac{4-3}{10} \right) : \frac{11}{15} = \frac{1}{10} : \frac{11}{15} = \frac{1}{2} \cdot \frac{15^3}{11} = \frac{3}{22}$$

Secondo metodo. Applichiamo la proprietà distributiva, dividendo ciascuna delle due frazioni tra parentesi per $\frac{11}{15}$ e poi sottraendo i risultati:

$$\left(\frac{2}{5} - \frac{3}{10} \right) : \frac{11}{15} = \frac{2}{5} : \frac{11}{15} - \frac{3}{10} : \frac{11}{15} = \frac{2}{5} \cdot \frac{15^3}{11} - \frac{3}{10} \cdot \frac{15^3}{11} = \frac{6}{11} - \frac{9}{22} = \frac{12-9}{22} = \frac{3}{22}$$

Il risultato è uguale nei due modi. Questo ci permette di verificare che il procedimento è corretto.

$$\# 211 \quad \left(\frac{7}{4} - \frac{2}{5} \right) \cdot \frac{10}{9} \qquad \frac{12}{5} \cdot \left(\frac{1}{6} - \frac{1}{8} \right)$$

$$\# 212 \quad \left(\frac{5}{2} + \frac{1}{4} \right) : \frac{11}{8} \qquad \frac{14}{3} \cdot \left(\frac{1}{2} + \frac{3}{7} \right)$$

$$\# 213 \quad \left(\frac{2}{5} + \frac{3}{7} \right) : \frac{4}{5} \qquad \left(\frac{4}{5} + \frac{1}{6} \right) \cdot \frac{3}{2}$$

$$\# 214 \quad \left(\frac{3}{5} + \frac{1}{15} - \frac{2}{3} \right) \cdot 15 \qquad \left(\frac{3}{8} + \frac{1}{4} + \frac{9}{2} \right) : \frac{3}{4}$$

Attenzione. Nel caso della moltiplicazione la proprietà distributiva si può applicare sia se la somma (o differenza) è il primo fattore sia se è il secondo. Nel caso della divisione, invece, la proprietà distributiva si può applicare solo se la somma (o sottrazione) è il primo fattore.



$$\left[\frac{3}{2}, \frac{1}{10} \right]$$

$$\left[2, \frac{13}{3} \right]$$

$$\left[\frac{29}{28}, \frac{29}{20} \right]$$

$$\left[0, \frac{41}{6} \right]$$

Con parentesi tonde Completa i passaggi per risolvere le seguenti espressioni con le parentesi tonde.

$$\# 215 \quad \left(3 + \frac{3}{4} \right) + \left(5 - \frac{5}{6} \right) - \left(5 + \frac{1}{12} \right) - \left(2 - \frac{1}{6} \right) = \frac{\dots}{4} + \frac{\dots}{6} - \frac{61}{12} - \frac{\dots}{6} =$$

$$= \frac{45 + \dots - 61 - \dots}{12} = \frac{\dots}{12} = \dots$$

$$\begin{aligned} \# 216 \quad & \left(\frac{7}{5} \cdot \frac{25}{28} + \frac{5}{6}\right) : \frac{35}{16} - \frac{2}{7} = \left(\frac{\dots}{\dots} + \frac{5}{6}\right) : \frac{35}{16} - \frac{2}{7} = \frac{\dots}{12} : \frac{35}{16} - \frac{2}{7} = \\ & = \frac{25}{12} \cdot \frac{\dots}{\dots} - \frac{2}{7} = \frac{20}{\dots} - \frac{2}{7} = \frac{\dots}{21} = \frac{\dots}{\dots} \end{aligned}$$

Addizioni e sottrazioni con parentesi tonde Risolvi le seguenti espressioni.

$$\# 217 \quad \left(\frac{7}{6} + \frac{5}{4}\right) - \left(\frac{2}{3} + \frac{3}{4}\right) + \frac{3}{5} \qquad \left(\frac{15}{6} - \frac{3}{2} - \frac{2}{3}\right) + \left(\frac{55}{14} - \frac{10}{7} - \frac{7}{4}\right) \qquad \left[\frac{8}{5}; \frac{13}{12}\right]$$

$$\# 218 \quad \left(\frac{10}{6} - 1\right) - \left(\frac{1}{3} - \frac{1}{6}\right) + \frac{5}{10} - 1 \qquad [0]$$

$$\# 219 \quad \left(\frac{9}{12} - \frac{2}{4}\right) + \frac{3}{5} - \left(\frac{3}{6} - \frac{4}{10}\right) - \frac{9}{20} + \frac{7}{10} \qquad [1]$$

$$\# 220 \quad \frac{2}{5} + \frac{7}{3} - \frac{1}{2} - \left(\frac{4}{5} - \frac{2}{3}\right) + \left(\frac{4}{6} - \frac{3}{10}\right) - \frac{7}{15} \qquad [2]$$

$$\# 221 \quad \left[\left(\frac{7}{24} - \frac{2}{9}\right) + \left(\frac{17}{18} - \frac{3}{4}\right)\right] + \frac{10}{18} + \left(\frac{17}{24} + \frac{5}{36}\right) \qquad \left[\frac{5}{3}\right]$$

$$\# 222 \quad \left(\frac{2}{3} + \frac{3}{4} + \frac{5}{6}\right) - \left(\frac{1}{2} + \frac{1}{3} - \frac{1}{4}\right) - \left(\frac{1}{6} + \frac{1}{4}\right) \qquad \left[\frac{5}{4}\right]$$

Le quattro operazioni con parentesi tonde Risolvi le seguenti espressioni.

$$\# 223 \quad 12 : \left(\frac{1}{2} + \frac{1}{10}\right) \qquad \left(1 - \frac{2}{5}\right) \cdot \frac{5}{6} \qquad \left[20; \frac{1}{2}\right]$$

$$\# 224 \quad \left(\frac{3}{2} - \frac{4}{3} + \frac{1}{5}\right) \cdot \frac{15}{22} \qquad \left(\frac{1}{2} + \frac{2}{3} + \frac{3}{4}\right) \cdot \frac{18}{46} \qquad \left[\frac{1}{4}; \frac{3}{4}\right]$$

$$\# 225 \quad \frac{1}{21} : \left(\frac{3}{7} + \frac{2}{21} - \frac{13}{42}\right) \qquad \left(\frac{2}{5} + \frac{3}{2} - \frac{3}{4}\right) \cdot \frac{15}{46} \qquad \left[\frac{2}{9}; \frac{3}{8}\right]$$

$$\# 226 \quad \left(\frac{3}{4} + \frac{1}{2}\right) + \frac{1}{2} \cdot \left(\frac{1}{2} - \frac{1}{3}\right) - \left(\frac{5}{6} - \frac{5}{9} + \frac{1}{18}\right) \qquad [1]$$

$$\# 227 \quad \left(\frac{4}{3} \cdot \frac{9}{8} + \frac{1}{6}\right) - \frac{8}{9} + \left(\frac{14}{6} - \frac{1}{4} : \frac{3}{8}\right) - \frac{4}{9} \qquad [2]$$

$$\# 228 \quad \left(\frac{6}{5} \cdot \frac{15}{16} + \frac{3}{4}\right) - \frac{25}{24} + \left(\frac{14}{3} - \frac{15}{14} : \frac{9}{21}\right) \qquad [3]$$

$$\# 229 \quad \frac{8}{15} + \left(\frac{7}{15} + \frac{5}{3}\right) : \left(\frac{11}{3} - \frac{7}{6}\right) - \frac{7}{15} \cdot \frac{7}{5} \qquad \left[\frac{11}{15}\right]$$

$$\# 230 \quad \left(\frac{5}{2} + \frac{5}{4}\right) \cdot \left(\frac{11}{13} - \frac{9}{26}\right) + \frac{3}{4} : \frac{3}{4} - \frac{3}{8} \qquad \left[\frac{5}{2}\right]$$

$$\# 231 \quad \left(\frac{1}{2} + \frac{2}{3} + \frac{1}{6}\right) + \left(\frac{5}{4} - \frac{1}{12} - \frac{5}{8}\right) : \frac{13}{16} - \frac{5}{4} \qquad \left[\frac{3}{4}\right]$$

$$\# 232 \quad \left(\frac{12}{7} \cdot \frac{35}{18} - \frac{5}{4}\right) - \frac{11}{6} + \left(\frac{9}{5} - \frac{24}{25} : \frac{16}{15}\right) \qquad \left[\frac{23}{20}\right]$$

$$\# 233 \quad \frac{4}{5} + \frac{5}{2} : \left(\frac{9}{8} + \frac{3}{4}\right) - \left(\frac{2}{3} - \frac{7}{15}\right) + \frac{1}{15} \qquad [2]$$

$$\# 234 \quad \left(\frac{4}{5} - \frac{7}{10} + \frac{1}{2}\right) \cdot \frac{5}{24} + \left(\frac{1}{10} + \frac{3}{20} - \frac{1}{5}\right) : \frac{2}{25} - \frac{1}{4} \qquad \left[\frac{1}{2}\right]$$

$$\# 235 \quad \left(1 - \frac{1}{5}\right) \cdot \left(\frac{7}{4} - 1 + \frac{1}{2}\right) - \left(\frac{3}{4} + \frac{2}{3} - \frac{7}{12}\right) \qquad \left[\frac{1}{6}\right]$$

$$\# 236 \left(5 + \frac{1}{4}\right) \cdot \left(2 - \frac{6}{7}\right) + \frac{3}{4} - \left(\frac{13}{2} - \frac{5}{12} : \frac{1}{2}\right) \quad \left[\frac{13}{12}\right]$$

$$\# 237 \left(\frac{8}{15} + \frac{7}{30} - \frac{1}{6}\right) \cdot \frac{25}{9} + \left(\frac{11}{21} - \frac{1}{7}\right) : \frac{4}{7} \quad \left[\frac{7}{3}\right]$$

$$\# 238 \left(\frac{2}{5} \cdot \frac{15}{8} - \frac{3}{4}\right) + \frac{1}{12} + \left(\frac{7}{6} - \frac{6}{5} : \frac{12}{5}\right) \quad \left[\frac{3}{4}\right]$$

$$\# 239 \left(\frac{1}{2} - \frac{1}{3}\right) \cdot \left(\frac{1}{2} + \frac{1}{3}\right) + \left(\frac{21}{20} - \frac{3}{10}\right) : \frac{3}{2} - \frac{1}{18} \quad \left[\frac{7}{12}\right]$$

$$\# 240 \left(\frac{7}{12} - \frac{1}{4}\right) \cdot \frac{1}{10} + \left(\frac{26}{35} - \frac{3}{70}\right) - \frac{2}{15} : 2 \quad \left[\frac{2}{3}\right]$$

$$\# 241 \left(\frac{1}{4} + \frac{5}{6}\right) : \left(3 - \frac{7}{4}\right) - \left(\frac{7}{10} + \frac{2}{5}\right) \cdot \frac{5}{11} - \frac{1}{15} \quad \left[\frac{3}{10}\right]$$

$$\# 242 \left(\frac{1}{2} + \frac{1}{3} + \frac{1}{4}\right) : \left(2 - \frac{1}{2} - \frac{1}{3}\right) - \left(\frac{1}{7} + \frac{2}{7} \cdot \frac{1}{4}\right) \quad \left[\frac{5}{7}\right]$$

$$\# 243 \left(\frac{7}{6} - \frac{1}{2}\right) : \left(\frac{7}{6} + \frac{3}{4} - \frac{3}{2}\right) + \frac{2}{5} \cdot \left(\frac{3}{4} + \frac{1}{2}\right) - \frac{1}{10} \quad [2]$$

Con potenze 1 Completa i passaggi per risolvere le seguenti espressioni con le potenze. Quando è possibile, applica le proprietà.

$$\# 244 \frac{8}{5^2} \cdot \frac{3}{2} \cdot \frac{5}{2^3} + 1 =$$

$$= \frac{8}{\dots} \cdot \frac{3}{2} \cdot \frac{\dots}{\dots} + 1 =$$

$$= \frac{\dots}{10} + 1 = \frac{\dots}{\dots}$$

$$\# 245 \left(\frac{1}{2} - \frac{1}{3}\right)^2 + \frac{2}{9} =$$

$$= \left(\frac{\dots}{6}\right)^2 + \frac{2}{9} =$$

$$= \frac{\dots}{\dots} + \frac{2}{9} =$$

$$= \frac{\dots}{36} = \frac{\dots}{\dots}$$

$$\# 246 \left(\frac{6}{5}\right)^2 \cdot \left(\frac{6}{5}\right)^5 : \left(\frac{6}{5}\right)^6 - \left(\frac{1}{2}\right)^2 \cdot \left(\frac{3}{5}\right)^2 =$$

$$= \left(\frac{6}{5}\right)^{2 \dots 5 \dots 6} - \left(\frac{1}{2} \cdot \frac{3}{5}\right)^{\dots} =$$

$$= \left(\frac{6}{5}\right)^{\dots} - \left(\frac{3}{\dots}\right)^{\dots} =$$

$$= \frac{6}{\dots} - \frac{\dots}{\dots} =$$

$$= \frac{\dots}{100} - \frac{\dots}{100} = \frac{\dots}{100}$$

Con potenze 2 Risolvi le seguenti espressioni. Quando possibile, applica le proprietà delle potenze e, se necessario, lascia il risultato sotto forma di potenza.

$$\# 247 \left(\frac{5}{4}\right)^2 - \left(\frac{1}{2}\right)^3 \quad \frac{2}{3^2} + \frac{5}{18} \quad \left[\frac{23}{16}, \frac{1}{2}\right]$$

$$\# 248 \frac{6}{5} \cdot \left(\frac{5}{2} - \frac{11}{6}\right)^2 \quad \left(\frac{3}{10} + \frac{1}{2}\right)^2 : \frac{8}{5} \quad \left[\frac{8}{15}, \frac{2}{5}\right]$$

$$\# 249 20 \cdot \left(\frac{2}{5} \cdot \frac{1}{2}\right)^2 \quad \frac{5^2}{12} : \frac{35}{24} \quad \left[\frac{4}{5}, \frac{10}{7}\right]$$

$$\# 250 \left(\frac{2}{3} - \frac{1}{4} - \frac{1}{12}\right)^2 + \frac{2}{9} \quad \frac{2^3}{5} - \frac{3}{10} \cdot \left(\frac{2}{3}\right)^2 \quad \left[\frac{1}{3}, \frac{22}{15}\right]$$

$$\# 251 \frac{27}{4^2} - \frac{3^2}{8} \quad \frac{5^2}{6} - \frac{100}{6^2} \quad \left[\frac{9}{16}, \frac{25}{18}\right]$$

$$\# 252 \frac{10}{23} - \frac{3^2}{46} + 2 \quad \left(\frac{2}{3}\right)^4 + \frac{3^2}{9^2} \quad \left[\frac{103}{46}, \frac{25}{81}\right]$$

$$\# 253 \left[\left(\frac{14}{9} \right)^3 \cdot \left(\frac{6}{7} \right)^3 \right]^5 \qquad \left[\left(\frac{2}{3^2} + \frac{1}{9} \right)^5 \right]^5 \qquad \left[\left(\frac{4}{3} \right)^{15} ; \left(\frac{1}{3} \right)^{25} \right]$$

$$\# 254 \left(\frac{4}{3} \right)^2 \cdot \left(\frac{27}{64} \right)^2 : \left(\frac{63}{8} \right)^2 \qquad \left[\frac{1}{196} \right]$$

$$\# 255 \frac{1}{36} + 44 \cdot \frac{1}{33} - \left(\frac{5}{6} \right)^2 + \frac{1^3}{2} : \frac{1^2}{2} \qquad \left[\frac{5}{3} \right]$$

Con parentesi quadre e graffe Completa i passaggi per risolvere le seguenti espressioni con parentesi quadre e graffe.

$$\# 256 \frac{4}{5} - \left(\frac{1}{5} + \frac{8}{20} \right) - \left[\frac{3}{5} - \left(\frac{1}{5} + \frac{3}{10} \right) \right] = \frac{4}{5} - \left(\frac{1}{5} + \frac{\dots}{5} \right) - \left[\frac{3}{5} - \frac{\dots}{10} \right] =$$

$$= \frac{4}{5} - \frac{\dots}{\dots} - \left[\frac{\dots}{10} \right] = \frac{\dots - 6 - 1}{10} = \frac{\dots}{10}$$

$$\# 257 1 - \left\{ \left[\left(\frac{7}{6} \right)^2 \cdot \left(\frac{2}{21} \right)^2 + \frac{1}{3^2} \right]^5 : \left(\frac{10}{81} \right)^4 \right\} = 1 - \left\{ \left[\left(\frac{7}{6} \cdot \frac{\dots}{\dots} \right)^2 + \frac{1}{\dots} \right]^5 : \left(\frac{10}{81} \right)^4 \right\} =$$

$$= 1 - \left\{ \left[\left(\frac{\dots}{\dots} \right)^2 + \frac{1}{9} \right]^5 : \left(\frac{10}{81} \right)^4 \right\} = 1 - \left\{ \left[\frac{\dots}{\dots} + \frac{1}{9} \right]^5 : \left(\frac{10}{81} \right)^4 \right\} =$$

$$= 1 - \left(\frac{\dots}{\dots} \right)^5 : \left(\frac{10}{81} \right)^4 = 1 - \left(\frac{\dots}{\dots} \right)^{\dots} = 1 - \frac{\dots}{\dots} = \frac{\dots}{\dots}$$

Addizioni e sottrazioni con parentesi quadre e graffe Risolvi le seguenti espressioni.

$$\# 258 \left(\frac{5}{8} + \frac{7}{10} - \frac{1}{4} + \frac{2}{5} \right) - \left[\left(\frac{6}{8} - \frac{1}{10} \right) + \left(1 + \frac{3}{8} - \frac{6}{5} \right) \right] \qquad \left[\frac{13}{20} \right]$$

$$\# 259 \frac{6}{16} - \left[\frac{1}{4} - \left(\frac{3}{4} - \frac{1}{2} \right) \right] - \left[\frac{5}{8} - \left(\frac{5}{16} + \frac{1}{4} \right) \right] \qquad \left[\frac{5}{16} \right]$$

$$\# 260 \frac{1}{2} + \frac{23}{4} - \left[\frac{37}{20} - \left(\frac{10}{4} - 1 \right) - \frac{1}{4} \right] - \left(1 + \frac{3}{20} \right) \qquad [5]$$

$$\# 261 \left(\frac{9}{2} - \frac{1}{4} - \frac{5}{6} + \frac{2}{3} \right) + \left[\left(\frac{10}{3} - \frac{10}{6} \right) - \left(1 - \frac{1}{6} \right) \right] - \frac{1}{4} \qquad \left[\frac{14}{3} \right]$$

$$\# 262 \frac{10}{14} + \frac{16}{7} - \left\{ \frac{1}{7} + \frac{3}{5} - \left[\frac{8}{10} - \left(\frac{6}{5} - \frac{6}{7} \right) \right] \right\} - \frac{18}{7} \qquad \left[\frac{1}{7} \right]$$

$$\# 263 \left(\frac{7}{8} + 4 \right) - \left\{ \frac{3}{4} + \left(5 - \frac{2}{4} \right) - \left[2 + \frac{5}{6} - \left(\frac{1}{3} + 1 \right) - \frac{1}{8} \right] + 1 \right\} \qquad [0]$$

$$\# 264 4 - \left\{ \frac{6}{14} + \frac{10}{7} + 1 + \frac{1}{2} - \left[\frac{6}{7} + \left(1 - \frac{1}{4} \right) - \left(\frac{3}{4} + \frac{1}{2} \right) \right] \right\} \qquad [1]$$

Tutte le operazioni con parentesi quadre e graffe Risolvi le seguenti espressioni.

$$\# 265 \frac{2}{3} + \left[\frac{4}{5} \cdot \left(3 + \frac{1}{8} \right) - 2 \right] \cdot \frac{5}{3} \qquad \left[\frac{3}{2} \right]$$

$$\# 266 \left[\left(\frac{21}{50} \cdot \frac{5}{3} + 3 + \frac{5}{6} \right) - \left(2 + \frac{14}{15} \right) \right] : \frac{2}{5} \qquad [4]$$

$$\# 267 \left[\left(2 - \frac{3}{4} \right) \cdot \frac{6}{15} \right] \cdot \frac{1}{2} + \left(\frac{1}{2} + \frac{3}{8} \right) - \left(\frac{7}{6} - \frac{9}{8} \right) \qquad \left[\frac{13}{12} \right]$$

$$\# 268 \left[\left(3 + \frac{1}{4} \right) \cdot \frac{5}{26} - \frac{1}{10} \right] \cdot \frac{24}{35} - \frac{4}{25} + \left(\frac{8}{21} \cdot \frac{7}{32} \right) \qquad \left[\frac{17}{60} \right]$$

- 269** $\left[\left(2 - \frac{11}{6} \right) + \left(3 - \frac{11}{4} \right) \right] \cdot \frac{8}{3} \cdot \left(1 - \frac{4}{15} : \frac{2}{3} \right)$ $\left[\frac{2}{3} \right]$
- 270** $\frac{1}{2} \cdot \left\{ \frac{3}{26} + \left[\frac{15}{8} - \left(\frac{1}{5} + \frac{1}{2} \right) \cdot \frac{5}{7} \right] : \frac{13}{4} \right\} \cdot \left(1 - \frac{2}{3} \right)$ $\left[\frac{7}{78} \right]$
- 271** $\frac{3}{5} + \left\{ \frac{8}{3} - \left[\left(\frac{5}{4} + \frac{1}{2} \right) + \left(2 + \frac{1}{5} + \frac{17}{15} - \frac{5}{2} \right) \right] \right\} \cdot \frac{1}{30}$ $\left[\frac{31}{10} \right]$
- 272** $\frac{2}{3} + \left\{ \frac{5}{9} + \left[\frac{5}{3} + \left(1 - \frac{7}{9} \right) + \frac{1}{3} \right] \cdot \frac{9}{4} \right\} : \frac{5}{9}$ $\left[\frac{32}{3} \right]$
- 273** $\left(2 - \frac{7}{9} - \frac{11}{12} \right) : \left[\left(3 - \frac{1}{2} - \frac{37}{60} \right) - \left(1 - \frac{1}{30} \right) \right]$ $\left[\frac{1}{3} \right]$
- 274** $\frac{3}{2} : \left[\frac{11}{4} - \frac{4}{3} + \frac{7}{3} - \left(1 + \frac{9}{10} - \frac{23}{5} \cdot \frac{1}{4} \right) \right]$ $\left[\frac{1}{2} \right]$
- 275** $\left(\frac{5}{10} \right)^2 : \left[\left(\frac{9}{27} + \frac{1}{2} \right)^2 : \frac{1}{2} - \frac{3}{4} + \frac{20}{5} \cdot \left(\frac{6}{7} + \frac{1}{7} \right) \right]^0$ $\left[\frac{1}{4} \right]$
- 276** $\left[\left(\frac{5}{6} + \frac{22}{15} \cdot \frac{25}{33} \right) : \frac{7}{9} - \frac{7}{4} \right] \cdot \left(\frac{2}{3} - \frac{2}{9} \right)$ $\left[\frac{1}{3} \right]$
- 277** $\left[\left(\frac{7}{10} + \frac{2}{5} \right) \cdot \left(1 + \frac{1}{2} \right) - \left(1 + \frac{1}{2} \right) + \left(4 - \frac{19}{5} \right) \right] : \frac{1}{4}$ $\left[\frac{7}{5} \right]$
- 278** $\left[\left(\frac{13}{15} - \frac{1}{6} + 1 - \frac{1}{10} \right) \cdot \frac{2}{3} + \left(\frac{14}{15} - \frac{1}{5} \right) \right] : \left(5 + \frac{1}{5} \right) + \frac{2}{13}$ $\left[\frac{1}{2} \right]$
- 279** $\left[\frac{10}{7} \cdot 5 - \left(\frac{1}{2} + \frac{3}{14} \right) : \frac{1}{5} \right] : \left(2 + \frac{1}{2} \right) - \frac{2}{3} - \frac{1}{7}$ $\left[\frac{13}{21} \right]$
- 280** $\left[\left(\frac{1}{2} + \frac{1}{4} \right) \cdot \left(\frac{1}{3} - \frac{1}{6} \right) + \left(\frac{1}{2} - \frac{9}{32} \right) \cdot \frac{4}{7} \right] \cdot \frac{3}{4} - \frac{1}{8}$ $\left[\frac{1}{16} \right]$
- 281** $\left[\left(\frac{15}{8} - \frac{5}{12} \right) : \frac{7}{12} - \left(\frac{1}{2} - \frac{1}{4} + \frac{13}{12} + \frac{2}{3} \right) \right] : \frac{5}{3} - \frac{3}{2} : 5 + 2$ $[2]$
- 282** $\frac{10}{18} : \left[\frac{3}{2} : \left(\frac{4}{3} - \frac{1}{2} \cdot \frac{1}{3} \right) - \frac{7}{28} : \frac{7}{4} - \left(1 - \frac{6}{7} \right) \right]$ $\left[\frac{5}{9} \right]$
- 283** $\frac{3}{10} - \left\{ \left[\left(\frac{3}{5} : 3 + \frac{1}{7} \right) \cdot \left(\frac{3}{2} + \frac{1}{4} \right) - \frac{9}{2} \cdot \frac{2}{30} \right] : 3 + \frac{1}{5} \right\}$ $[0]$
- 284** $\left(2 - \frac{3}{2} + \frac{7}{10} \right) : \left\{ \frac{4}{5} + \left[\frac{2}{3} - \frac{1}{81} \cdot \frac{18}{5} \right] : \frac{7}{9} - \frac{3}{5} \right\} \cdot \frac{5}{6}$ $[1]$
- 285** $\left[\frac{4}{5} - \frac{1}{8} : \left(1 - \frac{6}{8} \right) + \frac{4}{8} \right] : \left[\frac{3}{5} + \left(2 - \frac{1}{3} \right) : \frac{5}{6} - \frac{1}{5} \right]$ $\left[\frac{1}{3} \right]$
- 286** $\left[\left(\frac{5}{4} + \frac{2}{3} - 1 \right) : \frac{11}{6} : \left(\frac{4}{5} : \frac{12}{5} \right) \right] \cdot \left[\left(\frac{21}{10} - \frac{17}{20} \right) \cdot \left(2 - \frac{16}{21} : \frac{4}{7} \right) \right]$ $\left[\frac{5}{4} \right]$
- 287** $\left[\left(\frac{1}{4} \cdot \frac{4}{5} + \frac{3}{5} \right)^3 : \left(\frac{4}{5} \right)^2 - \frac{1}{125} : \left(\frac{2}{5} \cdot \frac{1}{2} \right)^2 \right] : \frac{3}{5}$ $[1]$
- 288** $\frac{15}{2} - \left\{ \left(\frac{7}{5} - \frac{1}{4} \right) : \left(\frac{3}{4} + 5 \right) - \frac{1}{5} + \left[\left(\frac{4}{3} - \frac{3}{5} \right) : \left(\frac{1}{5} + 2 \right) \right] + \frac{8}{9} \right\}$ $\left[\frac{113}{18} \right]$
- 289** $\left[\left(\frac{5}{2} - \frac{11}{6} \right)^2 \cdot \left(\frac{17}{6} - \frac{1}{4} - \frac{1}{3} \right) \right] : \left[\left(\frac{11}{3} - \frac{5}{3} - \frac{2}{5} \right)^2 : \left(\frac{6}{15} \right)^2 \right]$ $\left[\frac{1}{16} \right]$
- 290** $\left(4 + \frac{1}{6} - \frac{5}{3} \right) \cdot \frac{3}{2} - \left[\left(\frac{3}{10} + \frac{1}{2} \right)^2 - \frac{1}{2} \right] : \frac{14}{25}$ $\left[\frac{7}{2} \right]$

- 291** $\left\{ \left[24 : \frac{16}{3} - \left(\frac{5}{8} - \frac{1}{8} \right) : \frac{1}{8} \right] : \frac{1}{9} + \left(\frac{12}{5} + \frac{7}{40} \right) - \frac{3}{5} : \frac{8}{11} \right\} : \frac{5}{16}$ [20]
- 292** $\left\{ \left(\frac{5}{4} + \frac{13}{20} \right) \cdot \left(\frac{3}{2} - \frac{7}{6} \right) + \left[\left(\frac{3}{5} + \frac{1}{6} \right) + \left(\frac{3}{10} - \frac{4}{15} \right) \right] \right\} : \frac{1}{2}$ $\left[\frac{43}{15} \right]$
- 293** $\left[\frac{3}{10} + \left(\frac{3}{5} - \frac{1}{2} \right) \right] : \left\{ \frac{1}{2} + \left[\frac{5}{6} + \frac{1}{4} - \left(\frac{2}{3} - \frac{1}{4} \right) \right] + \left(\frac{1}{3} + \frac{1}{10} \right) \right\}$ $\left[\frac{1}{4} \right]$
- 294** $\frac{16}{5} \cdot \left\{ \left[\frac{27}{4} : \frac{3}{2} - \left(\frac{7}{16} + \frac{1}{16} \right) : \frac{1}{8} \right] : \frac{1}{2} + \frac{103}{40} - \frac{9}{5} \cdot \frac{11}{24} \right\} + \frac{1}{5}$ [9]
- 295** $\frac{14}{30} : \left\{ \left[\frac{2}{5} + \left(\frac{5}{8} - \frac{1}{2} : \frac{4}{3} \right) \cdot 4 \right] : \left[\frac{1}{6} + \frac{1}{4} : 3 : \left(\frac{9}{16} : \frac{3}{4} + \frac{3}{5} : \frac{2}{5} : 6 \right) \right] \right\}$ $\left[\frac{1}{12} \right]$
- 296** $\left(\frac{4}{5} \right)^2 : \left[\left(\frac{3}{5} + \frac{6}{5} - \frac{5}{3} \right)^2 : \left(\frac{1}{3} - \frac{1}{5} \right)^2 \right] + \left(\frac{3}{2} - \frac{3}{5} \right) : \frac{3}{5}$ $\left[\frac{107}{50} \right]$
- 297** $1 - \left[\left(1 - \frac{1}{3} \right) : \left(1 + \frac{1}{3} \right) \right]^2 - \left[\left(1 - \frac{1}{2} \right) : \left(1 + \frac{1}{2} \right) \right]^2 - \frac{5}{36}$ $\left[\frac{1}{2} \right]$
- 298** $\left\{ 1 + \left[\left(\frac{1}{2} + \frac{2}{3} - \frac{4}{5} \cdot \frac{3}{4} \right) \cdot \frac{15}{17} - \frac{1}{2} \right]^2 \right\} : \left(\frac{1}{2} \right)^2$ [4]
- 299** $\left(2 - \frac{3}{2} + \frac{7}{10} \right)^2 : \left[\frac{4}{5} + \left(\frac{2}{3} - \frac{1}{27} \cdot \frac{6}{5} \right) : \frac{7}{9} - \frac{3}{5} \right]^3 : \frac{6}{5}$ $\left[\frac{6}{5} \right]$
- 300** $\left\{ \left[\left(\frac{6}{10} \cdot \frac{6}{12} + \frac{2}{10} \right)^3 : \frac{9}{16} + \frac{1}{5} \right] : \left(\frac{3}{5} + \frac{2}{3} \right) + \frac{1}{3} \right\}^2 : \frac{2}{3} + \frac{1}{3}$ [1]
- 301** $\left\{ \left[\frac{1}{9} + 1 : 2 : \left(\frac{27}{64} : \frac{9}{16} + \frac{9}{25} : \frac{4}{25} \cdot \frac{1}{6} \right) \right] : \left[\frac{2}{5} + \left(\frac{5}{7} + \frac{4}{3} : \frac{14}{3} \right) : \frac{5}{3} \right] \right\} \cdot \frac{27}{5}$ [3]
- 302** $5 : \left(\frac{3}{4} + 3 - \frac{5}{2} \right) + \left\{ \left[\left(\frac{22}{5} + \frac{5}{2} \right) \cdot \frac{5}{3} - \left(\frac{11}{6} - \frac{7}{4} \right) : \frac{5}{6} \right] : \frac{19}{2} \right\} : \frac{2}{15} \cdot \frac{6}{30}$ $\left[\frac{29}{5} \right]$
- 303** $\left[\left(4 + \frac{1}{4} \right) + \left(1 + \frac{1}{4} \right) \right] : \frac{1}{4} + \left\{ \left[\left(5 - \frac{1}{2} \right) : \frac{15}{4} \right] \cdot \left[\left(\frac{5}{4} + 1 \right) \cdot \frac{20}{9} \right] \right\}$ [28]
- 304** $\left[\left(\frac{45}{16} : \frac{3}{2} - \frac{4}{3} \right) \cdot \left(2 - \frac{14}{13} \right) + \left(\frac{5}{6} + \frac{5}{4} \right) \cdot \left(2 - \frac{4}{5} \right) + \frac{1}{3} \right] \cdot \left(\frac{1}{2} + \frac{7}{5} \cdot \frac{2}{14} \right)$ $\left[\frac{7}{3} \right]$
- 305** $\left\{ \left[\frac{1}{2} - \left(3 - \frac{29}{10} \right) \right] : \left[\left(1 - \frac{3}{10} \right) - \left(\frac{1}{5} + \frac{1}{10} \right) \right] \right\} : \left[\left(\frac{4}{3} + \frac{5}{18} \right) : \frac{1}{9} - 14 \right]$ [2]
- 306** $\left\{ 1 : \left[\left(\frac{2}{3} + \frac{5}{4} - \frac{3}{2} \right) : \left(\frac{3}{4} - \frac{1}{3} \right) \right] + 1 : \left[\left(\frac{3}{4} + \frac{1}{6} - \frac{2}{3} \right) : \left(\frac{3}{2} - \frac{1}{4} \right) \right] \right\} \cdot \left(\frac{1}{6} + 2 \right)$ [13]
- 307** $\left\{ \left[\left(\frac{9}{4} - 1 \right) \cdot \left(\frac{4}{3} - 1 \right) + \frac{2}{5} : \frac{22}{25} \right] \cdot \left(\frac{7}{2} - 1 \right) - \frac{1}{8} + \frac{9}{4} \cdot \frac{15}{27} \right\} : \left(10 - \frac{1}{11} \right)$ $\left[\frac{1}{3} \right]$
- 308** $\left[\left(2 + \frac{2}{13} : \frac{1}{13} - \frac{3}{2} : 18 \right) \cdot 3 - \frac{1}{12} \cdot 102 \right] : \left[2 \cdot \left(\frac{26}{4} - \frac{5}{2} : 15 + \frac{1}{6} \right) \cdot \left(2 - \frac{3}{2} \right) \right]$ $\left[\frac{1}{2} \right]$
- 309** $\left[\frac{9}{16} \cdot \left(2 - \frac{4}{3} \right)^2 \cdot \left(\frac{4}{3} \right)^2 + \frac{4}{9} \right] \cdot \left(\frac{1}{2} + 1 - \frac{2}{5} \right)^2 \cdot \left(2 - \frac{3}{4} \right)^3 : \left(3 - \frac{1}{4} \right)^2$ $\left[\frac{5}{18} \right]$
- 310** $\left\{ \left[\left(\frac{1}{6} \right)^4 : \left(\frac{3}{4} - \frac{7}{12} \right)^3 \right]^2 : \left(\frac{1}{6} \right)^2 \right\} : \left\{ \left[\left(\frac{2}{7} \right)^3 : \left(\frac{2}{7} \right)^2 + \frac{8}{21} \right] : \left(\frac{1}{3} \right)^2 \right\}$ $\left[\frac{1}{6} \right]$
- 311** $\left[\left(\frac{7}{4} - \frac{1}{3} \right)^2 \cdot \left(\frac{7}{17} + 1 \right) + \left(\frac{3}{4} - \frac{2}{3} \right)^2 : \frac{1}{3} : \left(\frac{1}{2} \right)^3 \right] \cdot \left(\frac{2}{3} \right)^4 : \left(\frac{2}{3} \right)^2 - \left(\frac{1}{3} \right)^5 : \left(\frac{1}{3} \right)^3 - \frac{2}{3}$ $\left[\frac{5}{9} \right]$

- 312** $\left\{ \left(\frac{2}{5}\right)^2 \cdot \frac{5}{2} + \left[\frac{5}{8} - 3 \cdot \left(\frac{1}{2}\right)^3\right] : \left(\frac{1}{2}\right)^2 \right\} : \left\{ \frac{1}{6} + \frac{1}{12} : \left[\left(\frac{3}{4}\right)^4 : \left(\frac{3}{4}\right)^3 + \left(\frac{1}{2}\right)^5 \cdot 2^3\right] \right\} : 2^2$ [7/5]
- 313** $\left[\left(2 - \frac{5}{4}\right)^3 : \left(1 - \frac{1}{4}\right)^2 \right] \cdot \left\{ \left[\left(\frac{1}{3}\right)^2 : \left(1 - \frac{1}{3}\right)^3 - \frac{1}{10} + \frac{1}{6}\right] : \left(\frac{1}{8} + \frac{6}{5}\right) + 1 \right\}^2$ [4/3]
- 314** $\frac{8}{3} - \left\{ \frac{4}{8} + \frac{30}{4} : \left[\frac{1}{2} : \frac{1}{4} + \left(\frac{1}{4}\right)^0\right] \right\} \cdot \left[\left(\frac{1}{3}\right)^6 : \left(\frac{1}{3}\right)^5\right]^2 + \left(\frac{5}{3} - \frac{1}{2}\right)^2 - \left(\frac{1}{6}\right)^2$ [11/3]
- 315** $\left\{ \frac{3}{13} \cdot \frac{13}{2} + \left(\frac{1}{2} - \frac{1}{5}\right)^2 : \left(\frac{3}{5}\right)^2 - \left(\frac{1}{2}\right)^3 : \left(\frac{1}{2}\right)^2 + \left[1 - \frac{1}{2} \cdot \left(\frac{5}{6} + \frac{7}{8}\right) \cdot \frac{9}{41}\right] : \frac{13}{16} \right\} - \frac{1}{4}$ [2]
- 316** $\left\{ \frac{2}{3} - \left(\frac{1}{3}\right)^2 - \left[\left(3 - \frac{1}{3}\right) \cdot \left(\frac{2}{3} - \frac{1}{6}\right)^3 + \frac{7}{12} - \frac{1}{9} : \left(2 - \frac{6}{5}\right) - \frac{2}{9} : \frac{2}{5}\right] + \frac{1}{2} \right\} \cdot \frac{4}{5} : \frac{1}{3}$ [2]
- 317** $\left(\frac{27}{9}\right)^2 - \left\{ \frac{5}{2} - \left[\left(\frac{14}{5} - 1\right)^2 : \frac{9}{5} - \left(1 - \frac{3}{5}\right)^2 : \frac{2}{5}\right] + \frac{3}{5} - \frac{5}{6} + \left(\frac{36}{7} - 5\right)^2 \cdot (49 : 7)^2 + \frac{4}{5} \right\}$ [19/3]
- 318** $\left\{ \left[\left(1 + \frac{1}{4}\right)^2 : \left(1 - \frac{3}{4}\right)^2 \cdot \left(\frac{1}{5} + \frac{3}{10} + \frac{1}{20}\right) \cdot \frac{4}{5}\right] : \frac{1}{22} \right\}^2 : \left(1 - \frac{5}{6} \cdot \frac{3}{10}\right)^2$ [4/9]
- 319** $\left[\left(2 - \frac{39}{20}\right) \cdot \left(\frac{5}{4}\right)^2 + \left(5 - \frac{1}{2} - \frac{3}{2} : \frac{2}{5}\right)^3 \right] : \left\{ \left[\frac{10}{3} - \left(\frac{22}{7} \cdot \frac{1}{4} - \frac{2}{3}\right) - \left(\frac{16}{5} - \frac{29}{20}\right)\right] : \left(\frac{6}{7} + \frac{23}{21}\right) \right\}$ [2/3]
- 320** $1 : \left\{ \left[\left(\frac{5}{3} - \frac{1}{15}\right)^2 : \frac{24}{15}\right] \cdot \left[\left(\frac{25}{14} - \frac{9}{7}\right)^3 : \frac{1}{2} + \left(\frac{10}{21} + \frac{1}{4} + \frac{1}{42}\right)^2 \cdot \left(\frac{6}{5} - \frac{8}{15}\right)^2 : \frac{2}{3}\right]^2 \right\}$ [8/5]
- 321** $\left(\frac{69}{4} : \frac{23}{2}\right) \cdot \left\{ \left[\left(\frac{3}{16} + \frac{1}{8}\right) \cdot \frac{9}{2} + \left(\frac{1}{2} + \frac{3}{4}\right)^2 : \left(\frac{2}{3} + \frac{5}{6} - \frac{1}{4}\right)\right] : \frac{5}{8} - \left(\frac{15}{2} - \frac{9}{4} - 4\right) \right\} : 3$ [3/2]
- 322** $\left(1 + \frac{1}{2}\right) + \left\{ \frac{1}{6} + \frac{4}{19} \cdot \left[1 + \left(\frac{3}{4} - \frac{5}{12}\right) - \frac{8}{15} : \frac{16}{21}\right] - \frac{4}{15} \right\} : \frac{1}{10} + \left(\frac{1}{3} + \frac{5}{9}\right) : \frac{8}{3}$ [13/6]
- 323** $\left\{ \left(\frac{9}{25} : \frac{3}{5}\right)^2 : \left[\left(\frac{13}{44} + \frac{16}{11} - \frac{3}{4}\right)^4 : \left(\frac{4}{5} - \frac{3}{10}\right)^3 - 5\right]^2 + \left(\frac{5}{2} - \frac{5}{4}\right) : \left(\frac{10}{3} - \frac{5}{24}\right) + \frac{4}{25} \right\} : \frac{3}{5}$ [1]
- 324** $\left(1 - \frac{9}{10}\right) + \left\{ \left[\left(2 - \frac{6}{5}\right) : 5 + \left(\frac{2}{9} \cdot 3 + 6 : \frac{36}{5}\right) \cdot \left(\frac{1}{2} - \frac{3}{2} : 5\right)\right] : \left(1 + \frac{9}{4} : 15\right) \right\}^3 : \left(1 - \frac{1}{5}\right)^2$ [1/5]
- 325** $\frac{1}{2} + \left\{ \left[\left(\frac{7}{2}\right)^3 \cdot \frac{1}{7^2} : \left(\frac{4}{3} - \frac{5}{6}\right)^2 - \left(\frac{9}{10} : \frac{3}{4} + \frac{1}{5}\right)\right] : \left(\frac{3}{2} + \frac{3}{5}\right) \right\}^3 - \left[1 - \left(\frac{3}{2} - 1\right)^2\right] + \frac{1}{2^2}$ [1]
- 326** $\left[\left(\frac{100}{4}\right)^2 \cdot \frac{1}{25}\right] \cdot \left\{ \left[\left(\frac{3}{7} + \frac{25}{84} + \frac{1}{42}\right)^2 \cdot \frac{2}{3} + \left(\frac{3}{4} - \frac{1}{2}\right)^2 \cdot 4\right]^2 : \left[\left(\frac{5}{24} + \frac{1}{12}\right) \cdot \frac{3}{7} + \left(\frac{3}{4} - \frac{1}{2}\right) : \frac{2}{9}\right]^3 \right\}$ [5]
- 327** $\frac{11}{12} \cdot \left\{ \left[\left(\frac{13}{15} - \frac{9}{20}\right) \cdot \frac{4}{5} + \left(\frac{5}{4} - \frac{9}{10}\right) : \frac{7}{10}\right] : \left[\left(\frac{11}{12} + \frac{13}{6} - \frac{7}{3}\right)^2 \cdot \left(\frac{3}{2} - \frac{1}{6}\right)\right] - \frac{1}{9} \right\}$ [11/12]

- 328 Svolgimento a castello** Completa i passaggi per risolvere la seguente espressione contenente una frazione a termini frazionari.

$$\frac{\left(\frac{2}{3}\right)^2 - \frac{2}{9}}{\frac{4}{3}} \cdot 2 = \frac{\dots - \frac{2}{9}}{\frac{4}{3}} \cdot 2 = \frac{\dots}{\frac{4}{3}} \cdot 2 = \frac{\dots}{3} \cdot 2 = \frac{\dots}{3} \cdot \frac{3}{3} \cdot 2 = \frac{\dots}{3}$$

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Calcola l'espressione $\frac{1 - \frac{1}{7}}{1 + \frac{1}{7}}$ e scrivi il risultato sotto forma di un'unica frazione.

Risposta:

(INVALSI 2016-2017)

A castello Risolvi le seguenti espressioni contenenti frazioni a termini frazionari.

$$\text{330 } \frac{\left(\frac{1}{3} - \frac{1}{6}\right)^2}{\frac{5}{36}} + 1 \quad \left[\frac{6}{5}\right]$$

$$\text{331 } \frac{7}{100} : \frac{1}{5^2} - \frac{\frac{4}{5}}{\frac{8}{5}} \quad \left[\frac{5}{4}\right]$$

$$\text{334 } \frac{\left(\frac{4}{15} - \frac{7}{90} - \frac{1}{18}\right) \cdot \frac{5}{3} + \left(\frac{1}{10} + \frac{1}{6} + \frac{7}{30}\right) : \frac{9}{2}}{\left[\frac{5}{8} - \left(\frac{5}{16} + \frac{1}{4}\right)\right] \cdot \left(\frac{1}{3} + \frac{1}{4}\right) : \frac{7}{4}} \quad [16]$$

$$\text{335 } \frac{\left(\frac{17}{15} - \frac{4}{5}\right) : \left(\frac{14}{15} - \frac{3}{5}\right) + \left(\frac{5}{12} + \frac{5}{6} - 1\right) : \left(\frac{11}{6} - \frac{4}{3}\right)}{\left[\left(\frac{3}{4} + 1\right) : \left(\frac{1}{2} + \frac{3}{8}\right) + \left(\frac{5}{3} - 1\right) : \left(\frac{8}{3} - 2\right)\right] \cdot \frac{1}{2}} \quad [1]$$

$$\text{336 } \left(\frac{3}{2} \cdot \frac{2}{4} + \frac{5}{2}\right)^2 : \left(\frac{13}{4}\right)^2 \cdot \left[\left(\frac{3}{2} + \frac{1}{4} - \frac{1}{6}\right) : \frac{3}{2} - \left(\frac{3}{2} - \frac{2}{11} - \frac{3}{4}\right) : \frac{5}{11}\right]^2 \quad \left[\frac{9}{16}\right]$$

$$\text{337 } 3 - \frac{6 + \frac{1}{6 - \frac{1}{4}}}{6 - \frac{1}{6 - \frac{1}{4}}} \quad \left[\frac{130}{67}\right]$$

$$\text{332 } \frac{\frac{2}{3} \cdot \frac{3}{4} + \frac{1}{2}}{3 \cdot \left[3 - \frac{1}{2} \cdot \left(5 - \frac{1}{2}\right)\right] + \frac{12}{8} : \frac{1}{2} - \frac{35}{12}} \quad \left[\frac{3}{7}\right]$$

$$\text{333 } \frac{\frac{1}{4} \cdot \left(1 + \frac{15}{12}\right) - \frac{3}{4} \cdot \left(1 - \frac{1}{2}\right)}{\frac{9}{5} \cdot \left[2 - \left(\frac{1}{2} - \frac{1}{3}\right) \cdot \frac{5}{4} - \frac{1}{8} \cdot \left(\frac{5}{9} - \frac{3}{27}\right)\right]} \quad \left[\frac{3}{50}\right]$$



$$\text{338 } \frac{\left(2 - \frac{2 - \frac{2}{5}}{2 + \frac{2}{5}}\right)^2}{\left(2 + \frac{2 - \frac{2}{5}}{2 + \frac{2}{5}}\right)^2} \quad \left[\frac{1}{4}\right]$$

Linguaggio matematico Traduci le frasi in espressioni matematiche e risolvi.

$$\text{339 } \text{Moltiplica } \frac{3}{4} \text{ per } \frac{1}{6} \text{ e aggiungi } \frac{7}{8} \text{ al risultato.} \quad [1]$$

$$\text{340 } \text{Eleva al quadrato la differenza di cinque terzi e } \frac{1}{6}. \quad \left[\frac{9}{4}\right]$$

$$\text{341 } \text{Moltiplica la somma di } \frac{1}{6} \text{ e } \frac{7}{8} \text{ per il quadrato di } \frac{3}{5}. \quad \left[\frac{3}{8}\right]$$

$$\text{342 } \text{Calcola il doppio della differenza tra 2 e il quadrato di } \frac{1}{2}. \quad \left[\frac{7}{2}\right]$$

$$\text{343 } \text{Sottrai dal quadrato di } \frac{5}{3} \text{ il cubo di } \frac{1}{2}. \quad \left[\frac{191}{72}\right]$$

$$\text{344 } \text{Dividi il quadruplo di } \frac{5}{2} \text{ per la somma di } \frac{1}{7} \text{ e } \frac{2}{3}. \quad \left[\frac{210}{17}\right]$$

$$\text{345 } \text{Somma } \frac{5}{8} \text{ al prodotto di } \frac{1}{5} \text{ e } \frac{15}{8}, \text{ poi calcola il quadrato del cubo del numero ottenuto.} \quad [1]$$

$$\text{346 } \text{Trova quanto vale la frazione che ha per numeratore } \frac{3}{5} \text{ e per denominatore il quadrato della somma di } \frac{1}{5} \text{ e } \frac{1}{2}. \quad \left[\frac{60}{49}\right]$$

347 Numeri e variabili

a. Calcola il valore dell'espressione $a : \frac{9}{5} - \frac{1}{9}$ sapendo che $a = \frac{2}{3}$. $\left[\frac{7}{27}\right]$

b. Calcola il valore dell'espressione $\left(\frac{1}{b} + \frac{3}{b^2} - \frac{3}{25}\right) + \frac{14}{b}$ sapendo che $b = 5$. $[3]$

348 Incognita Scrivi il numero che puoi mettere al posto della x , in modo che l'uguaglianza sia vera.

$$\left(\frac{1}{2} + \frac{1}{5}\right) \cdot x = \frac{21}{10} \quad x = \dots\dots\dots$$