

Raccolta di espressioni con frazioni e numeri decimali ( $\mathbb{Q}^+$ ). Con soluzioni guidate.  
*Expressions with Rational Numbers & Periodic Decimal Expansions*

Convenzione di scrittura  $0,(\overline{3}) = 0,\overline{3}$

- |     |   |   |
|-----|---|---|
| 1.  | $0,\overline{3} - 0,2$  | <a href="#">soluzione</a>                                 |
| 2.  | $0,1\overline{3} + 0,5$   | <a href="#">soluzione</a>                                 |
| 3.  | $2 - 0,\overline{5} - 0,\overline{4}$   | <a href="#">soluzione</a>                                 |
| 4.  | $1 + 0,\overline{2} - 0,\overline{3}$   | $\left[\frac{8}{9}\right]$<br><a href="#">soluzione</a>   |
| 5.  | $1 - (0,5 - 0,\overline{3})$  | $\left[\frac{5}{6}\right]$<br><a href="#">soluzione</a>   |
| 6.  | $1 + 0,\overline{6} - 0,\overline{7}$   | $\left[\frac{8}{9}\right]$<br><a href="#">soluzione</a>   |
| 7.  | $0,\overline{1} + (1,\overline{5} - 0,\overline{4}) : 1,\overline{3}$         | $\left[\frac{17}{18}\right]$<br><a href="#">soluzione</a> |
| 8.  | $1 + 1,\overline{2} - 1,2$  | $\left[\frac{46}{45}\right]$<br><a href="#">soluzione</a> |
| 9.  | $1 - 0,5 \cdot (1 - 0,5 + 0,\overline{3})$                                    | $\left[\frac{7}{12}\right]$<br><a href="#">soluzione</a>  |
| 10. | $(0,8\overline{3} : 0,2\overline{7}) \cdot (1,\overline{2} : 2,\overline{4})$ | $\left[\frac{3}{2}\right]$<br><a href="#">soluzione</a>   |
| 11. | $(3,\overline{8} : 9,\overline{5}) \cdot 0,4$                                 | $\left[\frac{7}{43}\right]$<br><a href="#">soluzione</a>  |
| 12. | $(0,\overline{3} + 2,75) : 8,\overline{2}$                                    | $\left[\frac{3}{8}\right]$<br><a href="#">soluzione</a>   |
| 13. | $(0,\overline{3} + 0,6) : 1,4$  | $\left[\frac{2}{3}\right]$<br><a href="#">soluzione</a>   |

14.  $(3 + 0,5) \cdot (0,\bar{6} - 0,\bar{3}) + 0,\bar{3}$   $\left[ \frac{3}{2} \right]$   
[soluzione](#)
15.  $[0,5 \cdot (0,5 + 0,25) + 0,8] \cdot 2$   $\left[ \frac{47}{20} \right]$   
[soluzione](#)
16.  $17 : [(1 - 0,\bar{8}) \cdot (1 + 0,\bar{8})]$   $[81]$   
[soluzione](#)
17.  $[2 - (0,\bar{6} + 0,5)] : 0,\bar{3} - 1,5$   $\left[ \frac{1}{6} \right]$   
[soluzione](#)
18.  $0,5 + 0,08\bar{3} + 0,2$   $\left[ \frac{47}{60} \right]$   
[soluzione](#)
19.  $3,5 : (0,(6) - 0,(3) + 1,(2)) + 0,(3) =$   $\left[ \frac{13}{12} \right]$   
[soluzione](#)

# Soluzioni

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$$\begin{aligned}0,\bar{3} - 0,2 &= \\&= \frac{3}{9} - \frac{2}{10} = \\&= \frac{1}{3} - \frac{1}{5} = \\&= \frac{5-3}{15} = \frac{2}{15}\end{aligned}$$

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$$\begin{aligned}0,1\bar{3} + 0,5 &= \\&= \frac{13-1}{90} + \frac{5}{10} = \\&= \frac{12}{90} + \frac{1}{2} = \\&= \frac{2}{15} + \frac{1}{2} = \\&= \frac{4+15}{30} = \frac{19}{30}\end{aligned}$$

$$\begin{aligned}
 2 - 0,\bar{5} - 0,\bar{4} &= \\
 &= 2 - \frac{5}{9} - \frac{4}{9} = \\
 &= \frac{18 - 5 - 4}{9} = \\
 &= \frac{9}{9} = 1
 \end{aligned}$$

x Alice

$$\begin{aligned}
 2 - 0,(5) - 0,(4) &= \\
 &= 2 - 5/9 - 4/9 = \\
 &= (18-5-4)/9 = \\
 &= 9/9 = 1
 \end{aligned}$$


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$$\begin{aligned}
 1 + 0,\bar{2} - 0,\bar{3} &= \\
 &= 1 + \frac{2}{9} - \frac{3}{9} = \\
 &= \frac{9 + 2 - 3}{9} = \frac{8}{9}
 \end{aligned}$$


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$$\begin{aligned}
 1 - (0,5 - 0,\bar{3}) &= \\
 &= 1 - \left(\frac{5}{10} - \frac{3}{9}\right) = \\
 &= 1 - \left(\frac{1}{2} - \frac{1}{3}\right) = \\
 &= 1 - \frac{3 - 2}{6} = \\
 &= 1 - \frac{1}{6} = \frac{6 - 1}{6} = \frac{5}{6}
 \end{aligned}$$

$$\begin{aligned}
 1 - (0,5 - 0,(3)) &= \\
 &= 1 - (5/10 - 3/9) = \\
 &= 1 - (1/2 - 1/3) = \\
 &= 1 - (3-2)/6 = \\
 &= 1 - 1/6 = \\
 &= (6-1)/6 = \\
 &= 5/6
 \end{aligned}$$


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$$\begin{aligned}
 1 + 0,\bar{6} - 0,\bar{7} &= \\
 &= 1 + \frac{6}{9} - \frac{7}{9} = \\
 &= \frac{9 + 6 - 7}{9} = \frac{8}{9}
 \end{aligned}$$

$$\begin{aligned}
 0, \bar{1} + (1, \bar{5} - 0, \bar{4}) : 1, \bar{3} &= \\
 &= \frac{1}{9} + \left( \frac{14}{9} - \frac{4}{9} \right) : \frac{12}{9} = \\
 &= \frac{1}{9} + \frac{10}{9} \cdot \frac{9}{12} = \\
 &= \frac{1}{9} + \frac{5}{6} = \frac{2 + 15}{18} = \frac{17}{18}
 \end{aligned}$$


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$$\begin{aligned}
 1 + 1, \bar{2} - 1,2 &= \\
 &= 1 + \frac{11}{9} - \frac{12}{10} = \\
 &= 1 + \frac{11}{9} - \frac{6}{5} = \\
 &= \frac{45 + 55 - 54}{45} = \frac{46}{45}
 \end{aligned}$$


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$$\begin{aligned}
 1 - 0,5 \cdot (1 - 0,5 + 0, \bar{3}) &= \\
 &= 1 - \frac{5}{10} \cdot \left( 1 - \frac{5}{10} + \frac{3}{9} \right) = \\
 &= 1 - \frac{1}{2} \cdot \left( 1 - \frac{1}{2} + \frac{1}{3} \right) = \\
 &= 1 - \frac{1}{2} \cdot \left( \frac{6 - 3 + 2}{6} \right) = \\
 &= 1 - \frac{1}{2} \cdot \frac{5}{6} = \\
 &= 1 - \frac{5}{12} = \frac{12 - 5}{12} = \frac{7}{12}
 \end{aligned}$$

$$1 - 0,5 \cdot (1 - 0,5 + 0, (3)) =$$

$$\begin{aligned}
 & (0,8\bar{3} : 0,2\bar{7}) \cdot (1, \bar{2} : 2, \bar{4}) = \\
 & = \left( \frac{83 - 8}{90} : \frac{27 - 2}{90} \right) \cdot \left( \frac{12 - 1}{9} : \frac{24 - 2}{9} \right) = \\
 & = \left( \frac{75}{90} \cdot \frac{90}{25} \right) \cdot \left( \frac{11}{9} \cdot \frac{9}{22} \right) = \\
 & = 3 \cdot \frac{1}{2} = \frac{3}{2}
 \end{aligned}$$

$$(0,8(3) : 0,2(7)) \cdot (1, (2) : 2, (4)) =$$

$$\begin{aligned}
 & (3, (8) : 9, (5)) \cdot 0,4 = \\
 & = \left( \frac{38 - 3}{9} : \frac{95 - 9}{9} \right) \cdot \frac{4}{10} = \\
 & = \left( \frac{35}{9} : \frac{86}{9} \right) \cdot \frac{2}{5} = \\
 & = \left( \frac{35}{9} \cdot \frac{9}{86} \right) \cdot \frac{2}{5} = \\
 & = \frac{35}{86} \cdot \frac{2}{5} = \frac{7}{43}
 \end{aligned}$$

$$(3, \bar{8} : 9, \bar{5}) \cdot 0,4 =$$

$$(0, (3) + 2,75) : 8, (2) =$$

$$= \left( \frac{3}{9} + \frac{275}{100} \right) : \frac{82 - 8}{9} =$$

$$= \left( \frac{1}{3} + \frac{11}{4} \right) \cdot \frac{9}{74} =$$

$$= \left( \frac{4 + 33}{12} \right) \cdot \frac{9}{74} =$$

$$= \frac{37}{12} \cdot \frac{9}{74} =$$

$$= \frac{1}{4} \cdot \frac{3}{2} = \frac{3}{8}$$


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$$(0, \bar{3} + 2,75) : 8, \bar{2} =$$

$$(0, (3) + 0,6) : 1,4 =$$

$$= \left( \frac{3}{9} + \frac{6}{10} \right) : \frac{14}{10} =$$

$$= \left( \frac{1}{3} + \frac{3}{5} \right) \cdot \frac{5}{7} =$$

$$= \left( \frac{5 + 9}{15} \right) \cdot \frac{5}{7} =$$

$$= \frac{14}{15} \cdot \frac{5}{7} =$$

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

$$(3 + 0,5) \cdot (0,6) - 0,3) + 0,3) =$$

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

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

$$= \frac{6+1}{2} \cdot \frac{1}{3} + \frac{1}{3} =$$

$$= \frac{7}{2} \cdot \frac{1}{3} + \frac{1}{3} =$$

$$= \frac{7}{6} + \frac{1}{3} =$$

$$= \frac{7+2}{6} = \frac{9}{6} = \frac{3}{2}$$

$$(3 + 0,5) \cdot (0,\bar{6} - 0,\bar{3}) + 0,\bar{3} =$$

$$[0,5 \cdot (0,5 + 0,25) + 0,8] \cdot 2 =$$

$$= \left[ \frac{1}{2} \cdot \left( \frac{1}{2} + \frac{25^1}{100_4} \right) + \frac{8^4}{10_5} \right] \cdot 2 =$$

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

$$= \left[ \frac{1}{2} \cdot \frac{3}{4} + \frac{4}{5} \right] \cdot 2 =$$

$$= \left[ \frac{3}{8} + \frac{4}{5} \right] \cdot 2 =$$

$$= \left[ \frac{15 + 32}{40} \right] \cdot 2 =$$

$$= \frac{47}{40_{20}} \cdot 2^1 = \frac{47}{20}$$



$$\begin{aligned}
 & 17 : [(1 - 0,\bar{8}) \cdot (1 + 0,\bar{8})] = \\
 & = 17 : \left[ \left(1 - \frac{8}{9}\right) \cdot \left(1 + \frac{8}{9}\right) \right] = \\
 & = 17 : \left[ \left(\frac{9-8}{9}\right) \cdot \left(\frac{9+8}{9}\right) \right] = \\
 & = 17 : \left[ \frac{1}{9} \cdot \frac{17}{9} \right] = \\
 & = 17 : \frac{17}{81} = \\
 & = {}^1 17 \cdot \frac{81}{17_1} = 81
 \end{aligned}$$


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$$\begin{aligned}
 & [2 - (0,(6) + 0,5)] : 0,(3) - 1,5 = \\
 & = [2 - (0,\bar{6} + 0,5)] : 0,\bar{3} - 1,5 = \\
 & = \left[ 2 - \left(\frac{6}{9} + \frac{5}{10}\right) \right] : \frac{3}{9} - \frac{15}{10} = \\
 & = \left[ 2 - \left(\frac{2}{3} + \frac{1}{2}\right) \right] : \frac{2}{1} - \frac{3}{2} = \\
 & = \left[ 2 - \left(\frac{4+3}{6}\right) \right] : \frac{2}{1} - \frac{3}{2} = \\
 & = \left[ 2 - \frac{7}{6} \right] : \frac{2}{1} - \frac{3}{2} = \\
 & = \frac{12-7}{6} \cdot \frac{2}{1} - \frac{3}{2} = \frac{5}{3} - \frac{3}{2} = \frac{10-9}{6} = \frac{1}{6}
 \end{aligned}$$


$$\begin{aligned}
 &0,5 + 0,08(3) + 0,2 = \\
 &= \frac{5}{10} + \frac{83 - 8}{900} + \frac{2}{10} = \\
 &= \frac{1}{2} + \frac{75}{900} + \frac{1}{5} = \\
 &= \frac{1}{2} + \frac{3^1}{36_{12}} + \frac{1}{5} = \frac{130 + 5 + 12}{60} = \frac{47}{60}
 \end{aligned}$$




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$$\begin{aligned}
 &3,5 : (0,(6) - 0,(3) + 1,(2)) + 0,(3) = \\
 &\frac{35}{10} : \left( \frac{2}{3} - \frac{1}{3} + \frac{11}{9} \right) + \frac{1}{3} = \\
 &= \frac{7}{2} : \frac{6 - 3 + 11}{9} + \frac{1}{3} = \\
 &= \frac{7}{2} \cdot \frac{9}{14} + \frac{1}{3} = \frac{9}{4} + \frac{1}{3} = \frac{27 + 4}{12} = \frac{31}{12}
 \end{aligned}$$



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## Keywords

 *Matematica, Aritmetica, espressioni, frazioni, numeri razionali, razionali, insieme Q, Q, decimali, periodici, periodo, antiperiodo, decimali limitati, decimali illimitati periodici, espressioni, addizioni, sottrazioni, moltiplicazioni, divisioni*

  *Math, Arithmetic, Expression, Arithmetic Operations, Q, Rational numbers, Recurring Decimals, Arithmetic, Fraction, Expression, Periodic Decimal Expansions, Period, Arithmetic Operations Involving Fraction, Arithmetic Operations Involving Decimal Numbers*

 *Matemática, Aritmética, fracción, Número racional, número decimal finito, número decimal periódico.*

 *Mathématique, Arithmétique, nombre rationnel, périodique, développement décimal illimité*

 *Mathematik, Arithmetik, rationale Zahl, Brüche, Dezimalbruch, Binärbruch, gewöhnlicher Bruch, gemischter Bruch, Äquivalenzrelation*