

Lezione 27

Espressioni nell'insieme Q con rappresentazione decimale e frazionaria

$$\begin{aligned}
 & \left\{ \left[\left(1, \overline{16} \right)^2 - \left(\frac{1}{6} \right)^2 \right] \cdot 0, \overline{09} \right\} + \frac{29}{33} = \\
 & = \left\{ \left[\left(\frac{116 - 11}{90} \right)^2 - \frac{1}{36} \right] \cdot \frac{9 - 0}{99} \right\} + \frac{29}{33} = \\
 & = \left\{ \left[\left(\frac{105}{90} \right)^2 - \frac{1}{36} \right] \cdot \frac{1}{11} \right\} + \frac{29}{33} = \\
 & = \left\{ \left[\left(\frac{7}{6} \right)^2 - \frac{1}{36} \right] \cdot \frac{1}{11} \right\} + \frac{29}{33} = \\
 & = \left\{ \left[\frac{49}{36} - \frac{1}{36} \right] \cdot \frac{1}{11} \right\} + \frac{29}{33} = \\
 & = \left\{ \frac{48}{36} \cdot \frac{1}{11} \right\} + \frac{29}{33} = \left\{ \frac{4}{3} \cdot \frac{1}{11} \right\} + \frac{29}{33} = \\
 & = \frac{4}{33} + \frac{29}{33} = \frac{4+29}{33} = \frac{33}{33} = 1
 \end{aligned}$$

ES. 2

$$\begin{aligned}
 & \left\{ \left(-\frac{10}{3}\right)^{-2} : \left(\frac{1}{5} - \frac{1}{2}\right)^2 + \left[\left(\frac{3}{2} - \frac{5}{4} - \frac{3}{5}\right) : \left(\frac{14}{15} + \frac{1}{10} - \frac{1}{3}\right)\right]^2 \right\} \cdot \left(\frac{1}{3} + \frac{3}{7}\right) = \\
 & = \left\{ \left(-\frac{3}{10}\right)^2 : \left(\frac{2-5}{10}\right)^2 + \left[\left(\frac{30-25-12}{20}\right) : \left(\frac{28+3-10}{30}\right)\right]^2 \right\} \cdot \left(\frac{7+9}{21}\right) = \\
 & = \left\{ \frac{9}{100} : \left(-\frac{3}{10}\right)^2 + \left[\left(-\frac{7}{20}\right) : \left(\frac{21}{30}\right)\right]^2 \right\} \cdot \frac{16}{21} = \\
 & = \left\{ \frac{9}{100} : \frac{9}{100} + \left[\left(-\frac{7}{20}\right) : \left(-\frac{7}{10}\right)\right]^2 \right\} \cdot \frac{16}{21} =
 \end{aligned}$$

$$\begin{aligned}
&= \left\{ 1 + \left[-\frac{1}{2} \right]^2 \right\} \cdot \frac{16}{21} = \\
&= \left\{ 1 + \frac{1}{4} \right\} \cdot \frac{16}{21} = \left\{ \frac{4+1}{4} \right\} \cdot \frac{16}{21} = \frac{5}{4} \cdot \frac{16}{21} = \\
&= \left(\frac{20}{21} \right)
\end{aligned}$$

$$\begin{aligned}
 \text{ES. 3 } & \left(0, \overline{27} + \frac{8}{11} \right) \cdot 0, \overline{4} + \left(0, \overline{93} + \frac{1}{15} \right) \cdot \frac{5}{9} = \\
 & = \left(\frac{27-0}{99} + \frac{8}{11} \right) \cdot \frac{4-0}{9} + \left(\frac{93-9}{99} + \frac{1}{15} \right) \cdot \frac{5}{9} = \\
 & = \left(\frac{27}{99} + \frac{8}{11} \right) \cdot \frac{4}{9} + \left(\frac{84}{99} + \frac{1}{15} \right) \cdot \frac{5}{9} = \quad \textcircled{1} \\
 & = \left(\frac{3}{11} + \frac{8}{11} \right) \cdot \frac{4}{9} + \left(\frac{14}{15} + \frac{1}{15} \right) \cdot \frac{5}{9} = \\
 & = \frac{3+8}{11} \cdot \frac{4}{9} + \frac{14+1}{15} \cdot \frac{5}{9} = \frac{11}{11} \cdot \frac{4}{9} + \frac{15}{15} \cdot \frac{5}{9} = \frac{4}{9} + \frac{5}{9} = \frac{9}{9} = 1
 \end{aligned}$$