

LEZIONE 2

Espressioni con i numeri interi relativi

$$\begin{aligned}
 & [-8 \cdot 7 - (-3) \cdot (-4) - 2 \cdot 5] : [-2 \cdot 3 + 5] - [-3(-3 \cdot 4 + 5 \cdot 2) - 2(-5)] = \\
 & = [-56 - 12 - 10] : [-6 + 5] - [-3(-12 + 10) + 10] = \\
 & = [-68 - 10] : [-1] - [-3(-2) + 10] = \\
 & = (-78) : (-1) - [6 + 10] = \\
 & = 78 - 16 = \underline{62}
 \end{aligned}$$

$$\begin{array}{l}
 -56 + 12 = -(56 - 12) \\
 -56 - 12 = -(56 + 12)
 \end{array}$$

POTENZE A BASE NEGATIVA

ESEMPIO

$$\begin{array}{l} \text{BASE} \downarrow \\ (-2)^{\textcircled{3}} \Rightarrow \text{ESPONENTE DISPARI} \\ = (-2) \cdot \underbrace{(-2) \cdot (-2)}_{\text{3 VOLTE}} = -2^3 = -8 \end{array}$$

$$\begin{array}{l} (-2)^{\textcircled{4}} \Rightarrow \text{ESPONENTE PARI} \\ = \underbrace{(-2) \cdot (-2) \cdot (-2) \cdot (-2)}_{\text{4 VOLTE}} = +16 = \underline{16} \end{array}$$

$$\begin{aligned}
& [(-2)^2 + (-7-3) : 5 + (-6-2)^2 : (-3-1)] \cdot [(-1) \cdot (-7+6) - 4] = \\
& = [4 + \underline{(-10)} : 5 + (-8)^2 : (-4)] \cdot [(-1) \cdot (-1) - 4] = \\
& = [4 + (-2) + 64 : (-4)] \cdot [1 - 4] = \\
& = [4 + (-2) - 16] \cdot [-3] = [2 - 16] \cdot [-3] = (-14) \cdot (-3) = \underline{42}
\end{aligned}$$

$$\begin{aligned}
& \{-90 : [(-6) \cdot (7) - 3] + 50 : [-5 + 5 \cdot (-4)]\} \cdot (-10) = \\
& = \{-90 : [-42 - 3] + 50 : [-5 - 20]\} \cdot (-10) = \\
& = \{-90 : [-45] + 50 : [-25]\} \cdot (-10) = \\
& = \{2 + (-2)\} : (-10) = \{2 - 2\} : (-10) = 0 : (-10) = \underline{0}
\end{aligned}$$

$$\begin{aligned}
 & \{ [2 \cdot (-6) - 3 \cdot (-7) - 4(-9)] \cdot 3 + (-8 + 3 + 5) : (-9) \} : (-5) \\
 &= \{ [-12 + 21 + 36] \cdot 3 + (-5 + 5) : (-9) \} : (-5) = \\
 &= \{ [9 + 36] \cdot 3 + 0 : (-9) \} : (-5) = \\
 &= \{ 45 \cdot 3 \} : (-5) = 135 : (-5) = -27
 \end{aligned}$$

$$\begin{array}{r}
 45 \cdot 3 = \\
 135 \\
 \hline
 135 \overline{) 135} \\
 \underline{135} \\
 0
 \end{array}$$

FRAZIONI RELATIVE
SOMMA ALGEBRICA FRA FRAZIONI

$$-\frac{3}{4} - \frac{1}{1} = \frac{-3-4}{4} = -\frac{7}{4}$$

$$\frac{2}{1} - \frac{5}{2} = \frac{4-5}{2} = \left(-\frac{1}{2}\right) = -\frac{1}{2}$$

$$-\frac{5}{4} - \frac{1}{3} = \frac{-15-4}{12} = \left(-\frac{19}{12}\right)$$

$$\frac{3}{4} - \frac{10}{7} + \frac{1}{2} = \frac{21-40+14}{28} = \left(-\frac{5}{28}\right)$$

$$\frac{20}{7} - \frac{7}{2} + \frac{1}{14} = \frac{40-49+1}{14} = -\frac{8}{14} = \left(-\frac{4}{7}\right)$$

MOLTIPLICAZIONE FRA FRAZIONI RELATIVE

$$\boxed{\frac{3}{4} \cdot \left(-\frac{5}{7}\right) = -\frac{15}{28}}$$

$$\boxed{\left(-\frac{10}{3}\right) \cdot \frac{4}{5} = -\left[\frac{\overset{2}{\cancel{10}}}{3} \cdot \frac{4}{\cancel{5}_1}\right]} \\ = -\frac{8}{3}$$

$$\boxed{\left(-\frac{5}{3}\right) \cdot \frac{15}{2} = -\frac{\cancel{3}}{\cancel{3}_1} \cdot \frac{\cancel{15}^5}{2} = -\frac{25}{2}}$$

DIVISIONE FRA FRAZIONI RELATIVE

$$\frac{6}{7} : \left(-\frac{4}{5}\right) = \frac{\cancel{6}^3}{7} \cdot \left(-\frac{5}{\cancel{4}_2}\right) = \left(-\frac{15}{14}\right)$$

$$-\frac{25}{4} : \frac{35}{56} : \left(-\frac{65}{9}\right) = -\frac{\cancel{25}^5}{\cancel{4}_2} \cdot \frac{\cancel{56}^{16}}{\cancel{35}_7} \cdot \left(-\frac{9}{\cancel{65}_5}\right) = \sqrt{\frac{18}{13}}$$