

LEZIONE 3  
Esercizi con i numeri relativi

$$\begin{aligned}
 & -17^4 : \{ [(5^4)^2 : 5^7 - 4]^2 + (2^7 : 2^5) \cdot 2^2 \}^3 = \\
 & = -17^4 : \{ [5^8 : 5^7 - 4]^2 + 2^2 \cdot 2^2 \}^3 = \\
 & = -17^4 : \{ [5^1 - 4]^2 + 2^4 \}^3 = \\
 & = -17^4 : \{ [1]^2 + 16 \}^3 = \\
 & = -17^4 : \{ 1 + 16 \}^3 = -17^4 : 17^3 = -17^1 = \boxed{-17}
 \end{aligned}$$

$$\begin{aligned}
 1^2 &= 1 \\
 1 \cdot 2 &= 2
 \end{aligned}$$

$$\begin{aligned}
 2 \cdot 2 &= 4 \\
 4 \cdot 2 &= 8 \\
 8 \cdot 2 &= 16
 \end{aligned}$$

+	+	=	+
-	-	=	+
+	-	=	-
-	+	=	-

$$\begin{aligned} & \{ [13 - 3 \cdot (-2) + 9 : (-3) - \underline{(-20) : 5 + 6}] - 5 + 2 \cdot (-2) + 4 \} - (8 - 4)^2 = \\ & = \{ [13 + 6 - 3 - (-4) + 6] - 5 - 6 + 4 \} - (4)^2 = \\ & = \{ [16 + 4 + 6] - 5 - 6 + 4 \} - 16 = \\ & = \{ \underline{26} - 5 - 6 + 4 \} - 16 = \\ & = 19 - 16 = \underline{3} \checkmark \end{aligned}$$

$$\frac{3}{4} - \frac{10}{7} + \frac{1}{2} = \frac{21 - 40 + 14}{28} = \frac{-13 + 14}{28} = \frac{-5}{28}$$

$$\frac{20}{7} - \frac{7}{2} + \frac{1}{14} = \frac{40 - 49 + 1}{14} = \frac{-9 + 1}{14} = \frac{-8}{14} = \frac{-4}{7}$$

$$\frac{3}{2} - \frac{2}{5} - \frac{1}{6} = \frac{45 - 12 - 5}{30} = \frac{28}{30} = \frac{28}{30} = \frac{14}{15}$$

$$\frac{3}{4} + \frac{7}{6} - \frac{11}{12} = \frac{9 + 14 - 11}{12} = \frac{12}{12} = 1$$

$$\cancel{-\frac{5}{3}} \cdot \frac{\cancel{15}}{2} = -\frac{\cancel{5}}{\cancel{1} \cdot 3} \cdot \frac{\cancel{15}^5}{2} = \left(-\frac{25}{2}\right)$$

$$\left(-\frac{1}{3}\right)\left(-\frac{1}{2}\right) = \left(\frac{1}{6}\right)$$

$$\left(\frac{4}{3} - \frac{1}{4}\right) \cdot \left(-\frac{3}{1} + \frac{2}{13}\right) = \left(\frac{16-3}{12}\right) \cdot \left(\frac{-39+2}{13}\right) = \frac{\cancel{18}}{12} \cdot \left(-\frac{\cancel{37}}{\cancel{13}}\right)$$
$$= \frac{-37}{12} = -\frac{37}{12}$$

$$2 + \frac{1}{2} \cdot \left(-\frac{1}{4}\right) - 3 =$$

$$= \frac{2}{1} - \frac{1}{8} - \frac{3}{1} = \frac{16 - 1 - 24}{8} = \frac{15 - 24}{8} = \boxed{-\frac{9}{8}}$$

$$\left(-\frac{34}{1}\right) : \frac{2}{1} : \left(-\frac{51}{1}\right) = -\frac{34}{1} \cdot \frac{1}{2} : \left(-\frac{51}{1}\right) = -\frac{17}{1} \cdot \left(-\frac{1}{51}\right) = \boxed{\frac{1}{3}}$$

$$-\frac{25}{4} : \frac{35}{56} : \left(-\frac{65}{9}\right) = -\frac{25}{4} \cdot \frac{56}{35} \cdot \left(-\frac{9}{65}\right) = -\frac{5}{1} \cdot \frac{14}{4} \cdot \left(-\frac{9}{65}\right) = (-5) \cdot 2 \cdot \left(-\frac{9}{65}\right)$$

$$\left(-\frac{5}{1}\right) \left(\frac{2}{1}\right) \cdot \left(-\frac{9}{65}\right) = \left(-\cancel{10}\right) \cdot \left(-\frac{9}{\cancel{65}}\right) = \frac{2}{1} \cdot \frac{9}{13} = \frac{18}{13}$$


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ESPONENTE NEGATIVO

Es.  $(2)^{-3} = \left(\frac{1}{2}\right)^3 = \frac{(1)^3}{(2)^3} = \frac{1}{8}$

$$\left(\frac{2}{3}\right)^{-3} = \left(\frac{3}{2}\right)^3 = \frac{(3)^3}{(2)^3} = \frac{27}{8}$$

$\frac{2}{1}$   
 INVERSO  
 RECIPROCO  
 $\left(\frac{1}{2}\right)$

Scambio numeratore e denominatore

$$(-2)^{-3} = \left(-\frac{1}{2}\right)^3 = -\frac{1}{8}$$

$$\left(-\frac{2}{3}\right)^{-3} = \left(-\frac{3}{2}\right)^3 = -\frac{27}{8}$$

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

$$(-2)^2 = 4 \quad (-2)^4 = 16 \quad (-2)^6 = 64$$

$$(-2)^1 = -2 \quad (-2)^3 = -8 \quad (-2)^5 = -32$$