

Scheda di lavoro sulle potenze di frazioni. Proprietà. Completi di soluzione guidata.
Fractions and exponentiation

$$a^n \cdot a^m = a^{m+n} \quad \# \quad a^m : a^n = a^{m-n} \quad \# \quad (a^m)^n = a^{m \cdot n}$$

$$a^x \cdot b^x = (a \cdot b)^x \quad \# \quad \frac{a^x}{b^x} = \left(\frac{a}{b}\right)^x = (a : b)^x$$

1.	$\left(\frac{1}{3}\right)^2 \cdot \left(\frac{1}{3}\right)^2 =$	$\left(\frac{5}{3}\right)^4 : \left(\frac{5}{3}\right)^2 =$	soluzione
2.	$\left(\frac{3}{4}\right)^5 : \left(\frac{3}{4}\right)^4 =$	$\left(\frac{1}{2}\right)^3 \cdot \left(\frac{1}{2}\right)^3 =$	
3.	$\left[\left(\frac{1}{2}\right)^3\right]^2 =$	$\left[\left(\frac{2}{3}\right)^2\right]^2 =$	
4.	$\left[\left(\frac{1}{4}\right)^0\right]^2 =$	$\left(\frac{2}{3}\right)^3 : \left(\frac{2}{3}\right)^2 =$	
5.	$\left(\frac{2}{3}\right)^5 \cdot \left(\frac{3}{2}\right)^5 =$	$\left(\frac{4}{5}\right)^6 : \left(\frac{4}{5}\right)^6 =$	
6.	$\left(\frac{2}{3}\right)^3 : \left(\frac{2}{3}\right)^2 =$	$\left(\frac{1}{2}\right)^3 \cdot \left(\frac{1}{2}\right)^2 =$	
7.	$\left(\frac{4}{3}\right)^2 \cdot \left(\frac{4}{3}\right)^3 =$	$\left(\frac{2}{5}\right)^6 : \left(\frac{2}{5}\right)^4 =$	soluzione
8.	$\left[\left(\frac{6}{7}\right)^3 \cdot \left(\frac{6}{7}\right)^4\right]^2 : \left(\frac{6}{7}\right)^{12} =$	$\left(\frac{6}{7}\right)^7 \cdot \left(\frac{6}{7}\right)^4 : \left(\frac{6}{7}\right)^8 =$	
9.	$\left(\frac{6}{7}\right)^7 : \left(\frac{6}{7}\right)^4 : \left(\frac{6}{7}\right)^2 =$	$\left[\left(\frac{3}{4}\right)^3 \cdot \left(\frac{3}{4}\right)^2\right]^2 : \left(\frac{3}{4}\right)^8 =$	
10.	$\left(\frac{2}{3}\right)^2 : \left(\frac{4}{6}\right)^2 =$	$\frac{1}{3} \cdot \left(\frac{1}{3}\right)^4 : \left(\frac{1}{3}\right)^3 =$	
11.	$\left(\frac{2}{3}\right)^3 : \left(\frac{4}{3}\right)^3 =$	$\left(\frac{4}{9}\right)^2 : \left(1 - \frac{5}{9}\right)^2 =$	
12.	$\left(\frac{2}{3}\right)^2 : \left(\frac{9}{4}\right)^2 =$	$\left(\frac{1}{3}\right)^3 : \left(\frac{2}{3}\right)^3 : \frac{1}{2} =$	

Anticipazioni

$$13. \quad \left(\frac{2}{3}\right)^{-1} = \qquad \left(\frac{1}{2}\right)^{-2} =$$

$$14. \quad \left(\frac{1}{3}\right)^{-1} = \qquad \left(\frac{3}{4}\right)^{-2} =$$

$$15. \quad \left(\frac{1}{3}\right)^{-3} = \qquad \left[\left(\frac{1}{3}\right)^{-1}\right]^0 =$$

$$16. \quad \left(\frac{1}{3}\right)^{-2} = \qquad \left[\left(\frac{1}{3}\right)^2\right]^{-1} =$$

$$a^x \cdot a^y = a^{x+y} \quad \# \quad a^x : a^y = a^{x-y} \quad \# \quad (a^x)^y = a^{x \cdot y} \quad \# \quad a^x \cdot b^x = (a \cdot b)^x \quad \# \quad \frac{a^x}{b^x} = \left(\frac{a}{b}\right)^x$$

Soluzioni

$\left(\frac{1}{3}\right)^2 \cdot \left(\frac{1}{3}\right)^2 = \left(\frac{1}{3}\right)^{2+2} = \left(\frac{1}{3}\right)^4 = \frac{1}{81}$	$\left(\frac{5}{3}\right)^4 : \left(\frac{5}{3}\right)^2 = \left(\frac{5}{3}\right)^{4-2} = \left(\frac{5}{3}\right)^2 = \frac{25}{9}$
$\left(\frac{3}{4}\right)^5 : \left(\frac{3}{4}\right)^4 = \left(\frac{3}{4}\right)^{5-4} = \left(\frac{3}{4}\right)^1 = \frac{3}{4}$	$\left(\frac{1}{2}\right)^3 \cdot \left(\frac{1}{2}\right)^3 = \left(\frac{1}{2}\right)^{3+3} = \left(\frac{1}{2}\right)^6 = \frac{1}{64}$
$\left[\left(\frac{1}{2}\right)^3\right]^2 = \left(\frac{1}{2}\right)^{3 \cdot 2} = \left(\frac{1}{2}\right)^6 = \frac{1}{64}$	$\left[\left(\frac{2}{3}\right)^2\right]^2 = \left(\frac{2}{3}\right)^{2 \cdot 2} = \left(\frac{2}{3}\right)^4 = \frac{16}{81}$
$\left[\left(\frac{1}{4}\right)^0\right]^2 = \left(\frac{1}{4}\right)^{0 \cdot 2} = \left(\frac{1}{4}\right)^0 = 1$	$\left(\frac{2}{3}\right)^3 : \left(\frac{2}{3}\right)^2 = \left(\frac{2}{3}\right)^{3-2} = \left(\frac{2}{3}\right)^1 = \frac{2}{3}$

$\left(\frac{2}{3}\right)^5 \cdot \left(\frac{3}{2}\right)^5 = \left(\frac{2}{3} \cdot \frac{3}{2}\right)^5 = 1$ $a^x \cdot b^x = (a \cdot b)^x$	$\left(\frac{4}{5}\right)^6 : \left(\frac{4}{5}\right)^6 = \left(\frac{4}{5}\right)^{6-6} = \left(\frac{4}{5}\right)^0 = 1$
$\left(\frac{2}{3}\right)^3 : \left(\frac{2}{3}\right)^2 = \left(\frac{2}{3}\right)^{3-2} = \frac{2}{3}$	$\left(\frac{1}{2}\right)^3 \cdot \left(\frac{1}{2}\right)^2 = \left(\frac{1}{2}\right)^{3+2} \left(\frac{1}{2}\right)^5 = \frac{1}{32}$

$$\left(\frac{4}{3}\right)^2 \cdot \left(\frac{4}{3}\right)^3 = \left(\frac{4}{3}\right)^{2+3} = \frac{4^5}{3^5}$$

$$a^x \cdot a^y = a^{x+y}$$

$$\left(\frac{2}{5}\right)^6 : \left(\frac{2}{5}\right)^4 = \left(\frac{2}{5}\right)^{6-4} = \frac{4}{25}$$

$$a^x : a^y = a^{x-y}$$

$$\left[\left(\frac{6}{7}\right)^3 \cdot \left(\frac{6}{7}\right)^4\right]^2 : \left(\frac{6}{7}\right)^{12} =$$

$$= \left[\left(\frac{6}{7}\right)^{3+4}\right]^2 : \left(\frac{6}{7}\right)^{12} =$$

$$= \left[\left(\frac{6}{7}\right)^7\right]^2 : \left(\frac{6}{7}\right)^{12} = \left(\frac{6}{7}\right)^{14-12} = \left(\frac{6}{7}\right)^2$$

$$= \frac{36}{49}$$

$$\left(\frac{6}{7}\right)^7 \cdot \left(\frac{6}{7}\right)^4 : \left(\frac{6}{7}\right)^8 =$$

$$= \left(\frac{6}{7}\right)^{7+4-8} =$$

$$= \left(\frac{6}{7}\right)^3 = \frac{6^3}{7^3}$$

$$\left(\frac{6}{7}\right)^7 : \left(\frac{6}{7}\right)^4 : \left(\frac{6}{7}\right)^2 =$$

$$= \left(\frac{6}{7}\right)^{7-4-2} = \left(\frac{6}{7}\right)^1 = \frac{6}{7}$$

$$\left[\left(\frac{3}{4}\right)^3 \cdot \left(\frac{3}{4}\right)^2\right]^2 : \left(\frac{3}{4}\right)^8 =$$

$$= \left[\left(\frac{3}{4}\right)^{3+2}\right]^2 : \left(\frac{3}{4}\right)^8 =$$

$$= \left[\left(\frac{3}{4}\right)^5\right]^2 : \left(\frac{3}{4}\right)^8 =$$

$$= \left(\frac{3}{4}\right)^{10} : \left(\frac{3}{4}\right)^8 =$$

$$= \left(\frac{3}{4}\right)^{10-8} = \left(\frac{3}{4}\right)^2 = \frac{9}{16}$$


$$\left(\frac{2}{3}\right)^2 : \left(\frac{4}{6}\right)^2 = 1$$



$$\frac{1}{3} \cdot \left(\frac{1}{3}\right)^4 : \left(\frac{1}{3}\right)^3 = \frac{1}{9}$$


$\left(\frac{2}{3}\right)^3 : \left(\frac{4}{3}\right)^3 =$ $= \left(\frac{2}{3} : \frac{4}{3}\right)^3 =$ $= \left(\frac{2}{3} \cdot \frac{3}{4}\right)^3 = \left(\frac{1}{2}\right)^3 = \frac{1}{8}$	$\left(\frac{4}{9}\right)^2 : \left(1 - \frac{5}{9}\right)^2 =$ $= \left(\frac{4}{9}\right)^2 : \left(\frac{4}{9}\right)^2 = 1$
$\left(\frac{2}{3}\right)^2 : \left(\frac{9}{4}\right)^2 = \left(\frac{2}{3} : \frac{9}{4}\right)^2 =$ $= \left(\frac{2}{3} \cdot \frac{4}{9}\right)^2 = \frac{8^2}{27^2}$ $a^x : b^x = (a : b)^x$	$\left(\frac{1}{3}\right)^3 : \left(\frac{2}{3}\right)^3 : \frac{1}{2} = \left(\frac{1}{3} \cdot \frac{3}{2}\right)^3 \cdot 2 = \frac{1}{8} \cdot 2$ $= \frac{1}{4}$


$\left(\frac{2}{3}\right)^{-1} = \frac{3}{2}$	$\left(\frac{1}{2}\right)^{-2} = 4$
$\left(\frac{1}{3}\right)^{-1} = 3$	$\left(\frac{3}{4}\right)^{-2} = \frac{16}{9}$
$\left(\frac{1}{3}\right)^{-3} = 27$	$\left(\left(\frac{1}{3}\right)^{-1}\right)^0 = 1$


Keywords

 *Matematica, Aritmetica, Frazioni, Espressioni Q, addizione, sottrazione, moltiplicazione, divisione, esercizi con soluzioni*

  *Math, Arithmetic, Fraction expressions, Fraction, Expression, Addition, Subtraction, Multiplication, Division, Fraction expressions solved*

 *Matemática, Aritmética, Fracción, Expresiones, Resta, Sustracción, Suma, Adición, Multiplicación, División*

 *Mathématique, Arithmétique, Fraction, Problèmes avec fractions, Addition, Soustraction, Multiplication, Division*

 *Mathematik, Arithmetik, Bruchrechnung, Bruch, Subtraktion, Addition, Multiplikation, Division*

Arabic: كَسْر

Chinese (Simplified): 分数

Chinese (Traditional): 分數

Czech: zlomek

Danish: brøkdel

Dutch: deel, breuk

Estonian: murd(arv)

Finnish: murtoluku

French: fraction

Greek: κλάσμα

Hungarian: hányad, tört(rész)

Icelandic: brot

Indonesian: pecahan

Japanese: 分数

Korean: 분수

Lithuanian: trupmena

Norwegian: brøk(del)

Polish: ułamek

Portuguese (Brazil): fração

Portuguese (Portugal): fracção

Romanian: fracție

Russian: дробь

Slovak: zlomek

Slovenian: ulomek

Swedish: del

Turkish: kesir