CÁC PHÉP TOÁN VỀ PHÂN SỐ

KIẾN THỨC CẦN NHỚ

- Đối với các phép toán về phân số, ta vẫn có các tính chất như trong phép tính với số tự nhiên.
  (Giao hoán, Kết hợp, Phân phối, Quy tắc dấu ngoặc, Quy tắc chuyển vế).
- Trước khi tính toán, nên đưa các phân số về dạng phân số tối giản.

VẬN DỤNG

1 Tính giá trị biểu thức:

a. $\frac{3}{5}+\frac{6}{11}+\frac{7}{13}+\frac{2}{5}+\frac{16}{11}+\frac{19}{13}$

b. $\frac{7}{9}+\frac{2}{9}\text{x}\frac{5}{9}+\frac{2}{9}\text{x}\frac{4}{9}$

Trả lời:

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2 Thực hiện phép tính:

a. $\frac{13}{12}:\frac{7}{24}x\frac{21}{26}$

b. $\frac{1616}{7272}+\frac{13}{18}+\frac{151515}{363636}$

Trả lời:

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3 Tìm x biết:

a. $x-\frac{1}{2}:\frac{3}{4}=\frac{5}{8}$

b. $\frac{32}{5}-\frac{4}{5}:x=\frac{23}{10}$

c. $\left(x-\frac{3}{2}\right):2+\frac{2}{3}=\frac{5}{6}$

Trả lời:

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4 Thực hiện phép tính:

a. $\left(1-\frac{1}{2}\right)x\left(1-\frac{1}{3}\right)x\left(1-\frac{1}{4}\right)x...x\left(1-\frac{1}{100}\right)$

b. $\left(1+\frac{1}{10}\right)x\left(1+\frac{1}{11}\right)x\left(1+\frac{1}{12}\right)x...x\left(1+\frac{1}{50}\right)$

c. $\left(1-\frac{1}{4}\right)x\left(1-\frac{1}{9}\right)x\left(1-\frac{1}{16}\right)x...x\left(1-\frac{1}{100}\right)$

d. $\left(1-\frac{2}{30}\right)x\left(1-\frac{2}{42}\right)x\left(1-\frac{2}{56}\right)x...x\left(1-\frac{2}{420}\right)$

Trả lời:

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1 Tính giá trị biểu thức:

a. $\frac{3}{5}+\frac{6}{11}+\frac{7}{13}+\frac{2}{5}+\frac{16}{11}+\frac{19}{13}$

b. $\frac{7}{9}+\frac{2}{9}x\frac{5}{9}+\frac{2}{9}x\frac{4}{9}$

Trả lời:

a. $\frac{3}{5}+\frac{6}{11}+\frac{7}{13}+\frac{2}{5}+\frac{16}{11}+\frac{19}{13}$

$=\left(\frac{3}{5}+\frac{2}{5}\right)+\left(\frac{6}{11}+\frac{6}{11}\right)+\left(\frac{7}{13}+\frac{19}{13}\right)$

= 1 + 2 + 2

= 5

b. $\frac{7}{9}+\frac{2}{9}x\frac{5}{9}+\frac{2}{9}x\frac{4}{9}$

$=\frac{7}{9}+\frac{2}{9}x\left(\frac{5}{9}+\frac{4}{9}\right)$

$=\frac{7}{9}+\frac{2}{9}$ x 1

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

= 1

2 Thực hiện phép tính:

a. $\frac{13}{12}:\frac{7}{24}x\frac{21}{26}$

b. $\frac{1616}{7272}+\frac{13}{18}+\frac{151515}{363636}$

Trả lời:

a. $\frac{13}{12}:\frac{7}{24}x\frac{21}{26}$

$= \frac{13}{12} x \frac{24}{7} x \frac{21}{26}$

$= \frac{\cancel{13}^{1} x \cancel{24}^{2} x \cancel{21}^{3}}{\cancel{12}^{1} x \cancel{7}^{1} x \cancel{26}^{2}} = 3$

b. $\frac{1616}{7272} + \frac{13}{18} + \frac{151515}{363636}$

$= \frac{16x101}{72x101} + \frac{13}{18} + \frac{15x10101}{36x10101}$

$= \frac{16}{72} + \frac{13}{18} + \frac{15}{36}$

$= \frac{8}{36} + \frac{26}{36} + \frac{15}{36}$

$= \frac{49}{36}$

3 Tìm x biết:

a. $x - \frac{1}{2} : \frac{3}{4} = \frac{5}{8}$

b. $\frac{32}{5} - \frac{4}{5} : x = \frac{23}{10}$

c. $\left(x - \frac{3}{2}\right) : 2 + \frac{2}{3} = \frac{5}{6}$

Trả lời:

a. $x - \frac{1}{2} : \frac{3}{4} = \frac{5}{8}$

$x - \frac{1}{2} x \frac{4}{3} = \frac{5}{8}$

$x - \frac{2}{3} = \frac{5}{8}$

$x = \frac{5}{8} + \frac{2}{3}$

$x = \frac{31}{24}$

b. $\frac{32}{5} - \frac{4}{5} : x = \frac{23}{10}$

$\frac{4}{5} : x = \frac{32}{5} - \frac{23}{10}$

$\frac{4}{5} : x = \frac{41}{10}$

$x = \frac{4}{5} : \frac{41}{10}$

$x = \frac{4}{5} x \frac{10}{41}$

$x = \frac{8}{41}$

c. $\left(x - \frac{3}{2}\right) : 2 + \frac{2}{3} = \frac{5}{6}$

$\left(x - \frac{3}{2}\right) : 2 = \frac{5}{6} - \frac{2}{3}$

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

$x - \frac{3}{2} = \frac{1}{6} x 2$

$x - \frac{3}{2} = \frac{1}{3}$

$$x = \frac{1}{3} + \frac{3}{2}$$

$$x = \frac{11}{6}$$

4 Thực hiện phép tính:

a. $\left(1-\frac{1}{2}\right)x\left(1-\frac{1}{3}\right)x\left(1-\frac{1}{4}\right)x...x\left(1-\frac{1}{100}\right)$

b. $\left(1+\frac{1}{10}\right)x\left(1+\frac{1}{11}\right)x\left(1+\frac{1}{12}\right)x...x\left(1+\frac{1}{50}\right)$

c. $\left(1-\frac{1}{4}\right)x\left(1-\frac{1}{9}\right)x\left(1-\frac{1}{16}\right)x...x\left(1-\frac{1}{100}\right)$

d. $\left(1-\frac{2}{30}\right)x\left(1-\frac{2}{42}\right)x\left(1-\frac{2}{56}\right)x...x\left(1-\frac{2}{420}\right)$

Trả lời:

a. $\left(1-\frac{1}{2}\right)x\left(1-\frac{1}{3}\right)x\left(1-\frac{1}{4}\right)x...x\left(1-\frac{1}{100}\right)$

$= \frac{1}{2}x\frac{1}{3}x\frac{3}{4}x...x\frac{99}{100}$

$= \frac{1x2x3x...x99}{2x3x4x...x100}$

$= \frac{1}{100}$

b. $\left(1+\frac{1}{10}\right)x\left(1+\frac{1}{11}\right)x\left(1+\frac{1}{12}\right)x...x\left(1+\frac{1}{50}\right)$

$= \frac{11}{10}x\frac{12}{11}x\frac{13}{12}x...x\frac{51}{100}$

$= \frac{11x12x13x...x51}{10x11x12x...x50} = \frac{51}{10}$

c. $\left(1-\frac{1}{4}\right)x\left(1-\frac{1}{9}\right)x\left(1-\frac{1}{16}\right)x...x\left(1-\frac{1}{100}\right)$

$= \frac{3}{4}x\frac{8}{9}x\frac{15}{16}x...x\frac{99}{100}$

$= \frac{1x3}{2x2}x\frac{2x4}{3x3}x\frac{3x5}{4x4}x...x\frac{9x11}{10x10}$

$= \frac{(1x2x3x...x9)x(3x4x5x...x11)}{(2x3x4x...x10)x(2x3x4x...x11)} = \frac{11}{20}$

d. $\left(1-\frac{2}{30}\right)x\left(1-\frac{2}{42}\right)x\left(1-\frac{2}{56}\right)x...x\left(1-\frac{2}{420}\right)$

$= \frac{28}{30}x\frac{40}{42}x\frac{54}{56}x...x\frac{418}{420}$

$= \frac{4x7}{5x6}x\frac{5x8}{6x7}x\frac{6x9}{7x8}x...x\frac{19x22}{20x21}$

$= \frac{(4x5x6x...x19)x(7x8x9x...x22)}{(5x6x7x...x20)x(6x7x8x...x21)}$

$= \frac{4x22}{20x6} = \frac{11}{15}$