

BỒI DƯỠNG NĂNG LỰC TOÁN 4

GIÁO VIÊN: NGUYỄN THÀNH LONG

Đáp án bài tập tự luyện

TÍNH NHANH PHÂN SỐ BẰNG PHƯƠNG PHÁP RÚT GỌN

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Bài 1: Rút gọn rồi tính:

a) $\frac{45}{30} \times \frac{17}{51}$

b) $\frac{11}{33} \times \frac{54}{36}$

c) $\frac{24}{15} \times \frac{10}{14} \times \frac{56}{72}$

Bài giải:

a) $\frac{45}{30} \times \frac{17}{51}$

$$= \frac{3}{2} \times \frac{1}{3} = \frac{1}{2}$$

b) $\frac{11}{33} \times \frac{54}{36}$

$$= \frac{1}{3} \times \frac{3}{2} = \frac{1}{2}$$

c) $\frac{24}{15} \times \frac{10}{14} \times \frac{56}{72}$

$$= \frac{8}{5} + \frac{5}{7} + \frac{7}{9} = \frac{8}{9}$$

Bài 2: Tính bằng cách thuận tiện nhất:

a) $\frac{1 \times 2 \times 3 \times 4}{2 \times 3 \times 4 \times 5}$

b) $\frac{32}{48} \times \frac{35}{21} \times \frac{63}{14} \times \frac{9}{30}$

c) $\frac{21}{17} \times \frac{13}{14} \times 56 \times \frac{3}{42}$

Bài giải:

a) $\frac{1 \times 2 \times 3 \times 4}{2 \times 3 \times 4 \times 5}$

$$= \frac{1}{5}$$

b) $\frac{32}{48} \times \frac{35}{21} \times \frac{63}{14} \times \frac{9}{30}$

$$= \frac{8 \times 4}{8 \times 6} \times \frac{7 \times 5}{7 \times 3} \times \frac{7 \times 9}{7 \times 2} \times \frac{3 \times 3}{3 \times 10}$$

$$= \frac{4}{6} \times \frac{5}{3} \times \frac{9}{2} \times \frac{3}{10}$$

$$= \frac{3}{2}$$

c) $\frac{21}{17} \times \frac{13}{14} \times 56 \times \frac{3}{42}$

$$= \frac{21 \times 13 \times 56 \times 3}{17 \times 14 \times 42}$$

$$= \frac{21 \times 13 \times 4 \times 14 \times 3}{17 \times 14 \times 2 \times 21}$$

$$= \frac{13 \times 2 \times 3}{17} = \frac{78}{17}$$

Bài 3: Tính giá trị của biểu thức sau bằng cách thuận tiện nhất

a, $\frac{1995}{1996} \times \frac{19961996}{19931993} \times \frac{199319931993}{199519951995}$

b, $\frac{328}{435} \times \frac{468}{432} \times \frac{435}{164} \times \frac{432}{984} \times \frac{164}{468}$

Bài giải:

a, $\frac{1995}{1996} \times \frac{19961996}{19931993} \times \frac{199319931993}{199519951995}$

$$= \frac{1995}{1996} \times \frac{1996}{1993} \times \frac{1993}{1995} = 1$$

b, $\frac{328}{435} \times \frac{468}{432} \times \frac{435}{164} \times \frac{432}{984} \times \frac{164}{468}$

$$= \frac{328}{984} = \frac{328}{328 \times 3} = \frac{1}{3}$$

Bài 4: Tính

a, $\left(1 - \frac{1}{2}\right) \times \left(1 - \frac{1}{3}\right) \times \left(1 - \frac{1}{4}\right) \times \left(1 - \frac{1}{5}\right)$

b, $\left(1 + \frac{1}{2}\right) \times \left(1 + \frac{1}{3}\right) \times \left(1 + \frac{1}{4}\right) \times \left(1 + \frac{1}{5}\right)$

Bài giải:

a, $\left(1 - \frac{1}{2}\right) \times \left(1 - \frac{1}{3}\right) \times \left(1 - \frac{1}{4}\right) \times \left(1 - \frac{1}{5}\right)$

b, $\left(1 + \frac{1}{2}\right) \times \left(1 + \frac{1}{3}\right) \times \left(1 + \frac{1}{4}\right) \times \left(1 + \frac{1}{5}\right)$

$$= \frac{1}{2} \times \frac{2}{3} \times \frac{3}{4} \times \frac{4}{5} = \frac{1}{5}$$

$$= \frac{3}{2} \times \frac{4}{3} \times \frac{5}{4} \times \frac{6}{5} = \frac{6}{2} = 3$$

Bài 5: Tính

a, $\left(1 + \frac{1}{2}\right) \times \left(1 + \frac{1}{3}\right) \times \left(1 + \frac{1}{4}\right) \times \dots \times \left(1 + \frac{1}{49}\right)$

b, $\left(1 - \frac{2}{5}\right) \times \left(1 - \frac{2}{7}\right) \times \left(1 - \frac{2}{9}\right) \times \left(1 - \frac{2}{11}\right) \times \dots \times \left(1 - \frac{2}{97}\right) \times \left(1 - \frac{2}{99}\right)$

Bài giải:

a, $\left(1 + \frac{1}{2}\right) \times \left(1 + \frac{1}{3}\right) \times \left(1 + \frac{1}{4}\right) \times \dots \times \left(1 + \frac{1}{49}\right)$

$$= \frac{3}{2} \times \frac{4}{3} \times \frac{5}{4} \times \dots \times \frac{50}{49}$$

$$= \frac{50}{2} = 25$$

b, $\left(1 - \frac{2}{5}\right) \times \left(1 - \frac{2}{7}\right) \times \left(1 - \frac{2}{9}\right) \times \left(1 - \frac{2}{11}\right) \times \dots \times \left(1 - \frac{2}{97}\right) \times \left(1 - \frac{2}{99}\right)$

$$= \frac{3}{5} \times \frac{5}{7} \times \frac{7}{9} \times \frac{9}{11} \times \dots \times \frac{95}{97} \times \frac{97}{99}$$

$$= \frac{3}{99} = \frac{1}{33}$$

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