901. (1) $\frac{5}{m-n}-\frac{3}{m+n}$; (2) $\frac{4}{p-q}+\frac{2}{p+q}$;

(3) $\frac{a}{x+y}+\frac{a}{x-y}$; (4) $\frac{x}{a-b}-\frac{x}{a+b}$;

902. (1) $\frac{m}{m+n}+\frac{n}{m-n}$; (2) $\frac{y}{y-a}-\frac{a}{y+a}$;

(3) $\frac{a}{a-3}-\frac{3}{a+3}$; (4) $\frac{p}{p-q}+\frac{q}{p+q}$;

903. (1) $\frac{5}{2x-2}+\frac{3}{4x-4}$; (2) $\frac{7}{5a+5}-\frac{3}{10a+10}$;

(3) $\frac{a}{3a+3b}-\frac{2a}{6a+6b}$; (4) $\frac{3x}{4x+4y}-\frac{x}{8x+8y}$;

904. (1) $\frac{2m}{5m+5n}+\frac{3n}{5m-5n}$; (2) $\frac{7x}{3x+3y}-\frac{2x}{3x-3y}$;

(3) $\frac{5b}{ax+ay}-\frac{2a}{bx+by}$; (4) $\frac{b}{a-b}-\frac{a}{b-a}$.

905. (1) $\frac{7a}{x^2-9}+\frac{5a}{x-3}+\frac{a}{x+3}$; (2) $\frac{4}{x+2}+\frac{3}{x-2}-\frac{x+2}{x^2-4}$;

(3) $\frac{m}{1-a}-\frac{m}{1+a}+\frac{m}{1-a^2}$; (4) $\frac{1}{a+2}+\frac{1}{a-2}-\frac{4}{a^2-4}$.

906. (1) $\frac{m-n}{2m+2n}+\frac{m^2+n^2}{m^2-n^2}$; (2) $\frac{x^2+y^2}{x^2-y^2}-\frac{x+y}{2x-2y}$;

(3) $\frac{7a-1}{2a^2+6a}+\frac{5-3a}{a^2-9}$; (4) $\frac{a-b}{5a+5b}-\frac{a^2+b^2}{a^2-b^2}$.

907. (1) $\frac{x+1}{x^2-x}-\frac{x+2}{2x^2-2}$; (2) $\frac{a+b}{a}-\frac{a}{a-b}+\frac{b^2}{a^2-ab}$;

(3) $\frac{7}{2x-4}-\frac{3}{x+2}-\frac{12}{x^2-4}$; (4) $\frac{5}{2x^2+6x}-\frac{4-3x^2}{x^2-9}-3$.

908. (1) $\frac{7}{8a^2-18b^2}+\frac{1}{2a^2+3ab}-\frac{1}{4ab-6b^2}$.

(2) $\frac{2}{n+2}+\frac{n+3}{n^2-4}-\frac{3n+1}{n^2-4n+4}$;

(3) $\frac{3}{a+2}+\frac{a-1}{a^2-9}-\frac{a-1}{(a+3)(a+2)}$;

(4) $\frac{5}{x-3}-\frac{x-2}{x^2-9}+\frac{x-1}{2x+6}$.

909. (1) $\frac{3}{2m+6}-\frac{m-2}{m^2+6m+9}$; (2) $\frac{5-a}{a^2-8a+16}+\frac{6}{5a-20}$;

(3) $\frac{1}{2x+2}-\frac{x-1}{3x^2+6x+3}$;

(4) $\frac{4}{3m-3n}+\frac{3m-n}{2m^2-4mn+2n^2}$;

910. (1) $\frac{5}{2n-3}+\frac{2}{2n+3}-\frac{n-1}{9-4n^2}$;

(2) $\frac{1}{3m-2}-\frac{4}{2+3m}-\frac{3m-5}{4-9m^2}$;

(3) $\frac{1+a}{a-3}-\frac{1-2a}{3+a}-\frac{a(1-a)}{9-a^2}$;

(4) $\frac{(x-1)x}{x^2-25}-\frac{x-3}{x+5}+\frac{x-2}{5-x}$.

911. (1) $\frac{2}{a-1}+\frac{5}{a+1}-\frac{3a}{(a+1)^2}$;

(2) $\frac{3}{x+2}-\frac{4}{x-2}+\frac{2x}{x^2+4x+4}$;

(3) $\frac{1}{p-3}-\frac{3}{2p+6}-\frac{p}{2p^2-12p+18}$;

(4) $\frac{7}{m}-\frac{4}{m-2n}-\frac{m-n}{4n^2-m^2}$.

912. (1) $\frac{1}{x-2a}+\frac{1}{x+2a}+\frac{8a^2}{4a^2x-x^3}$;

(2) $\frac{4x-3}{3-2x}-\frac{4+5x}{3+2x}-\frac{3+x-10x^2}{4x^2-9}$;

(3) $\frac{4a^2-3a+5}{a^3-1}-\frac{1-2a}{a^2+a+1}+\frac{6}{1-a}$;

(4) $\frac{2a-1}{2a}-\frac{2a}{2a-1}-\frac{1}{2a-4a^2}$.

42. Törtek szorzása és osztása

Végezzük el a következő szorzásokat és osztásokat (924–935).

924. (1) $\frac{15}{28} \cdot \frac{2}{3}$; (2) $\frac{5}{6} : \frac{2}{3}$; (3) $\frac{a}{b} \cdot \frac{c}{d}$; (4) $\frac{x}{y} : \frac{a}{b}$.

925. (1) $\frac{9a}{16b} \cdot \frac{2}{3}$; (2) $\frac{8c}{21d^2} : \frac{6c^2}{7d}$; (3) $\frac{x^4}{y^3} \cdot \frac{y^2}{x^3}$; (4) $\frac{3ab}{4xy} \cdot \frac{10x^2y}{21a^2b}$;

(5) $3m \cdot \frac{n}{12m}$; (6) $5a : \frac{15a}{b}$; (7) $\frac{12xy}{25z} : 8x^2$; (8) $\frac{5c}{28d^2} \cdot 21cd$.

926. (1) $\frac{1}{a} : b$; (2) $c : \frac{1}{a}$; (3) $\frac{1}{x} \cdot y$; (4) $2 \cdot \frac{1}{a}$.

927. (1) $8a^2b^4 \cdot \left(-\frac{3a}{4b^3}\right)$; (2) $16x^2y^3 : \left(-\frac{20x^5y^4}{3a^2b}\right)$;

(3) $-\frac{18a^2b^2}{5cd} : \frac{6ab^3}{5c^2d^4}$; (4) $\frac{25x^4y^3}{14a^2} \cdot \left(-\frac{21ab}{10x^3y^2}\right)$.

928. (1) $\frac{9xy}{5ab} \cdot \frac{3ab}{4yz} \cdot \frac{4bz}{3axy}$; (2) $\left(\frac{2ax}{yz} : \frac{3bx}{ay}\right) : \frac{9b^2z}{8a^2xy}$;

(3) $\left(\frac{8b^2cd}{9a^5} : \frac{7cd}{12a^3}\right) \cdot \frac{14a^4}{3b^2}$; (4) $\frac{3p^2mq}{2a^2b^2} \cdot \frac{3abc}{8x^2y^2} : \frac{9a^2b^2c^3}{28pxy}$.

929. (1) $\frac{a^2 - ab}{b} \cdot \frac{b^2}{a}$; (2) $\frac{ab + b^2}{9} \cdot \frac{3a}{b^2}$;

(3) $\frac{x^2 - y^2}{6x^2y^2} : \frac{x + y}{3xy}$; (4) $\frac{x^2 + xy}{x} : \frac{xy + y^2}{y}$.

930. (1) $\frac{a^2b - 4b^3}{3ab^2} \cdot \frac{a^2b}{a^2 - 2ab}$; (2) $\frac{4p^2 - 9q^2}{p^2q^2} : \frac{2ap + 3aq}{2pq}$;

(3) $\frac{x^2 - xy}{x^2 + xy} \cdot \frac{x^2y + xy^2}{xy}$; (4) $\frac{c + d}{c - d} : \frac{c^2 + cd}{2c^2 - 2d^2}$;

931. (1) $\frac{a^2 - b^2}{a^2} \cdot \frac{a^4}{(a+b)^2}$; (2) $\frac{a^2 - 25}{a^2 - 3a} : \frac{a^2 + 5a}{a^2 - 9}$;

(3) $\frac{x^2 - 4y^2}{x^2 - xy} \cdot \frac{x - y}{x^2 + 2xy}$; (4) $\frac{3m^2 - 3n^2}{m^2 + mp} : \frac{6m - 6n}{m + p}$.

932. (1) $\frac{a^2 - b^2}{(a+b)^2} \cdot \frac{3a + 3b}{4a - 4b}$; (2) $\frac{5 - 5a}{(1+a)^2} : \frac{10 - 10a^2}{3 + 3a}$;

(3) $-\frac{(a+b)^2}{(a-b)^2} \cdot \frac{3(a-b)^2}{4(a+b)^3}$; (4) $\frac{(x+y)^2}{xy - y^2} : \left[-\frac{xy + y^2}{(x-y)^2}\right]$.

933. (1) $\frac{5m - 5n}{4m + 4n} \cdot \frac{8m + 8n}{15m - 15n}$; (2) $\frac{2a + 2b}{3a - 3b} : \frac{6a + 6b}{5a - 5b}$;

(3) $\frac{ax + ay}{x^2 - 2xy + y^2} \cdot \frac{2x - 2y}{ax^2 + 2axy + ay^2}$;

(4) $\frac{am^2 - an^2}{m^2 + 2mn + n^2} : \frac{am^2 - 2amn + an^2}{3m + 3n}$.

934. (1) $\frac{2a^3 - 2b^3}{3a + 3b} \cdot \frac{6a^2 - 6b^2}{a^2 - 2ab + b^2}$;

(2) $\frac{x^2 + xy}{5x^2 - 5y^2} : \frac{x^2 - xy}{3x^3 + 3y^3}$; (3) $\frac{a^4 - x^4}{a^3 - x^3} \cdot \frac{a^2 + x^2}{a^2 - x^2}$;

(4) $\frac{5x^2 - 10xy}{x^2 + 4y^2} \cdot \frac{x^4 - 16y^4}{15(x - 2y)^2}$.

*935. (1) $\frac{3a^2 + 3ab + 3b^2}{4a + 4b} \cdot \frac{2a^2 - 2b^2}{9a^3 - 9b^3}$;

(2) $\frac{5x^2 - 10xy + 5y^2}{2x^2 - 2xy + 2y^2} : \frac{8x - 8y}{10x^3 + 10y^3}$;

(3) $\frac{a^2 - 5a + 6}{a^2 + 7a + 12} \cdot \frac{a^2 + 3a}{a^2 - 4a + 4}$;

(4) $\frac{x^2 + 2x - 3}{x^2 + 3x - 10} : \frac{x^2 + 7x + 12}{x^2 - 9x + 14}$.

A következő törteket egyszerűsítsük úgy, hogy a számlálót és a nevezőt ugyanazzal a számmal vagy kifejezéssel szorozzuk meg. (936 – 940.)

936. *(1)* $\dfrac{\frac{1}{8}}{1-\frac{3}{8}}$; *(2)* $\dfrac{\frac{1}{2}-\frac{1}{4}}{\frac{1}{2}+\frac{1}{3}}$; *(3)* $\dfrac{y-\frac{1}{y}}{\frac{1}{y}+1}$; *(4)* $\dfrac{\frac{1}{a}+\frac{1}{b}}{\frac{1}{ab}}$.

937. *(1)* $\dfrac{\frac{1}{x}+\frac{1}{y}}{\frac{1}{x}-\frac{1}{y}}$; *(2)* $\dfrac{\frac{a}{b}+\frac{b}{a}}{\frac{a}{b}-\frac{b}{a}}$; *(3)* $\dfrac{\frac{1}{x}-\frac{1}{2x}}{\frac{1}{x^2}-\frac{1}{2x^2}}$; *(4)* $\dfrac{a-\frac{x^2}{a}}{x-\frac{a^2}{x}}$.

938. *(1)* $\dfrac{\frac{1}{1-x}+\frac{1}{1+x}}{\frac{1}{1-x}-\frac{1}{1+x}}$; *(2)* $\dfrac{\frac{x}{x-1}-\frac{x+1}{x}}{\frac{x}{x+1}-\frac{x-1}{x}}$;

(3) $\dfrac{\frac{a+b}{a-b}}{\frac{(a+b)^2}{a^2-b^2}}$; *(4)* $\dfrac{\frac{x-y}{x+y}+\frac{x+y}{x-y}}{\frac{x}{y}+\frac{y}{x}}$.

939. *(1)* $1+\dfrac{x}{1-\frac{x}{x+2}}$; *(2)* $1-\dfrac{a}{1-\frac{a}{a+1}}$;

(3) $1+\dfrac{1}{2+\frac{1}{3+\frac{1}{x}}}$; *(4)* $\dfrac{x}{x-\frac{1}{x-\frac{x}{1-x}}}$.

940. *(1)* $\dfrac{x-2+\frac{3}{x}}{1+\frac{1}{x}+\frac{1}{x^2}}$; *(2)* $\dfrac{1-\frac{2b}{a}+\frac{b^2}{a^2}}{a-b}$;

(3) $\dfrac{\frac{m}{n}-2-\frac{3n}{m}}{\frac{m}{n}+\frac{3n}{m}-4}$; *(4)* $\dfrac{\frac{x}{4}-1+\frac{3}{4x}}{\frac{x}{2}-\frac{6}{x}+\frac{1}{2}}$.

(2) $\left(\frac{3a}{1-3a}-\frac{2a}{3a+1}\right):\frac{6a^2+10a}{1-6a+9a^2}$;

(3) $(x^2-1)\cdot\left(\frac{1}{x-1}-\frac{1}{x+1}-1\right)$;

(4) $\left(\frac{a}{x-a}-\frac{a}{x+a}\right)\cdot\frac{x^2+2ax+a^2}{2a^2}$.

967. (1) $\left(\frac{x^2}{y^2}+\frac{y}{x}\right):\left(\frac{x}{y^2}-\frac{1}{y}+\frac{1}{x}\right)$;

(2) $\left(1+\frac{a}{x}+\frac{a^2}{x^2}\right)\cdot\left(1-\frac{a}{x}\right)\cdot\frac{x^3}{a^3-x^3}$;

(3) $\left[\frac{1}{(a+b)^2}-\frac{1}{(a-b)^2}\right]:\left[\frac{1}{a+b}+\frac{1}{a-b}\right]$;

(4) $\left(\frac{x}{x-a}-\frac{a}{x+a}\right):\left(\frac{x+a}{a}-\frac{x-a}{x}\right)$.

968. (1) $\left(\frac{b}{a^2-ab}+\frac{a}{b^2-ab}\right)\cdot\frac{a^2b+ab^2}{a^2-b^2}$;

(2) $\left(\frac{2a}{a+2}+\frac{2a}{6-3a}+\frac{8a}{a^2-4}\right):\frac{a-4}{a-2}$;

(3) $\left(\frac{a^2+b^2}{a}+b\right):\left[\left(\frac{1}{a^2}+\frac{1}{b^2}\right)\cdot\frac{a^3-b^3}{a^2+b^2}\right]$;

(4) $(x^2-1)\cdot\left(\frac{1}{x-1}-\frac{1}{x+1}+1\right)$.

969. (1) $\left[\frac{a-1}{3a+(a-1)^2}-\frac{1-3a+a^2}{a^3-1}-\frac{1}{a-1}\right]:\frac{a^2+1}{1-a}$;

(2) $\left(\frac{a^2-ab}{a^2b+b^3}-\frac{2a^2}{b^3-ab^2+a^2b-a^3}\right)\cdot\left(1-\frac{b-1}{a}-\frac{b}{a^2}\right)$.

970. (1) $\left(\frac{a^2}{a+n}-\frac{a^3}{a^2+n^2+2an}\right):\left(\frac{a}{a+n}-\frac{a^2}{a^2-n^2}\right)$;

(2) $\left(\frac{2a}{a+1}+\frac{2}{a-1}+\frac{4a}{a^2-1}\right)\cdot\left(\frac{2a}{a+1}+\frac{2}{a-1}-\frac{4a}{a^2-1}\right)$.

971. (1) $\left(m+1-\frac{1}{1-m}\right):\left(m-\frac{m^2}{m-1}\right)$;

(2) $\left(\frac{2ab}{4a^2-9b^2}+\frac{b}{3b-2a}\right):\left(1-\frac{2a-3b}{2a+3b}\right)$.

972. (1) $\left(\frac{p}{p^2-4}+\frac{2}{2-p}+\frac{1}{p+2}\right):\left(p-2+\frac{10-p^2}{p+2}\right)$;

(2) $\left(a-\frac{1}{1-a}\right):\frac{a^2-a+1}{a^2-2a+1}$.

973. (1) $\left(\frac{4c^2+21}{2-2c}-6\right):\frac{2cn+3n-4c-6}{2-2c^2}$;

(2) $\left(\frac{2ab+4b-3a-6}{2-2b^2}\right):\left(\frac{4b^2+21}{2+2b}-6\right)$.

974. (1) $\left(\frac{1}{1-a}-1\right):\left(a-\frac{1-2a^2}{1-a}+1\right)$;

(2) $\left(\frac{1}{a^2-ab}-\frac{3b^2}{a^4-ab^3}-\frac{b}{a^3+a^2b+ab^2}\right)\cdot\left(b+\frac{a^2}{a+b}\right)$.

975. (1) $\left(\frac{2a}{2a+b}-\frac{4a^2}{4a^2+4ab+b^2}\right):\left(\frac{2a}{4a^2-b^2}+\frac{1}{b-2a}\right)$;

(2) $\left(\frac{2q}{p+2q}-\frac{4q^2}{p^2+4pq+4q^2}\right):\left(\frac{2q}{p^2-4q^2}+\frac{2}{2q-p}\right)$.

976. (1) $\left(\frac{1}{a+1}-\frac{3}{a^3+1}+\frac{3}{a^2-a+1}\right)\cdot\left(a-\frac{2a-1}{a+1}\right)$;

(2) $\left(\frac{8+a^3}{x^2-y^2}:\frac{4-2a+a^2}{x-y}\right):\left(x+\frac{xy+y^2}{x+y}\right)$.

977. (1) $\left(\frac{2x^2+x}{x^3-1}-\frac{x+1}{x^2+x+1}\right)\cdot\left(1+\frac{x+1}{x}-\frac{x^2+5x}{x^2+x}\right)$;

(2) $\left(x-\frac{4xy}{x+y}+y\right):\left(\frac{x}{x+y}-\frac{y}{y-x}-\frac{2xy}{x^2-y^2}\right)$.

978. (1) $\left(\frac{1}{a^2-b^2}+\frac{1}{a^2+2ab+b^2}\right):\frac{b^2+4ab-a^2}{a^2-b^2}$;

(2) $\left(\frac{b^2}{a^3-ab^2}+\frac{1}{a+b}\right):\left(\frac{a-b}{a^2+ab}-\frac{a}{b^2+ab}\right)$.

979. (1) $\left(\frac{c-d}{c^2+cd}-\frac{c}{d^2+cd}\right):\left(\frac{d^2}{c^3-cd^2}+\frac{1}{c+d}\right)$;

(2) $\left(\frac{1}{c^2+2cd+d^2}+\frac{1}{c^2-d^2}-\frac{1}{c^2-2cd+d^2}\right):\left(\frac{d^2+4cd-c^2}{c^2-d^2}\right)$.

980. (1) $\left(\frac{2x^2+3x}{4x^2+12x+9}-\frac{3x+2}{2x+3}+\frac{4x-1}{2x+3}\right)\cdot\frac{2x+3}{2x-3}$;

(2) $\left(\frac{3a+2}{3a^2+1}-\frac{18a^3+a-9}{9a^4-1}+\frac{3a-2}{3a^2-1}\right):\frac{a^2+10a+25}{9a^4-1}$.

981. (1) $\left(\frac{x+1}{1-x}-\frac{1-x}{1+x}-\frac{4x^2}{x^2-1}\right):-2\left(\frac{1}{x^3+x^2}-\frac{1-x}{x^2}-1\right)$;

(2) $\left(\frac{x-y}{x^2-xy}-\frac{x}{y^2+xy}\right):\left(\frac{y^2}{x^3-xy^2}+\frac{1}{x-y}\right)$.

982. (1) $\left[\left(\frac{x}{y}-\frac{y}{x}\right):\left(\frac{x}{y}+\frac{y}{x}-2\right)\right]:\left(1+\frac{y}{x}\right)$;

(2) $\left(\frac{2a+1}{2a-1}-\frac{2a-1}{2a+1}\right):\left[1:\left(1-\frac{1}{a}+\frac{1}{4a^2}\right)\right]$.

983. (1) $\left(\frac{1+2n}{4+2n}-\frac{n}{3n-6}+\frac{\frac{2}{3}n^2}{4-n^2}\right)\cdot\frac{24-12n}{6+13n}$;

(2) $\left[\frac{a+b}{2(a-b)}-\frac{a-b}{2(a+b)}-\frac{2b^2}{b^2-a^2}\right]\cdot\left(\frac{1}{b}-\frac{1}{a}\right)$.

984. (1) $\left(\frac{5}{2a+3}+\frac{2}{3-2a}+\frac{2a+9}{4a^2-9}\right):\frac{8}{4a^2+12a+9}$;

(2) $\left(\frac{5}{2a-1}+\frac{8}{2a+1}+\frac{7+16a}{1-4a^2}\right)\cdot\frac{2a-1}{a-1}$.

985. (1) $\left(\frac{1}{2a-b}+\frac{3b}{b^2-4a^2}-\frac{2}{2a+b}\right):\left(\frac{4a^2+b^2}{4a^2-b^2}+1\right)$;

(2) $\left(\frac{1}{p-2q}+\frac{6q}{4q^2-p^2}-\frac{2}{p+2q}\right):\left(\frac{p^2+4q^2}{p^2-4q^2}+1\right)$.

986. (1) $\left[\frac{a^2}{a^2-b^2}-\frac{a^2b}{a^2+b^2}\cdot\left(\frac{a}{ab+b^2}+\frac{b}{a^2+ab}\right)\right]:\frac{b}{a-b}$;

(2) $\left(a-\frac{4ab}{a+b}+b\right):\left(\frac{a}{a+b}-\frac{b}{b-a}-\frac{2ab}{a^2-b^2}\right)$.

987. (1) $\left[\frac{p^2-q^2}{pq}-\frac{1}{p+q}\left(\frac{p^2}{q}-\frac{q^2}{p}\right)\right]:\frac{p-q}{p}$;

(2) $\left[\frac{b^2+c^2}{b^2c^2}\cdot\left(\frac{1}{b^2}-\frac{1}{c^2}\right)-\left(\frac{1}{a^2}-\frac{1}{c^2}\right)\cdot\frac{a^2+c^2}{a^2c^2}\right]:\frac{a^2+b^2}{a^2b^2}$.