A コース

① $-15xy \div 5xy \times (-2x)$

$= \dfrac{-15xy}{1} \div \dfrac{5xy}{1} \times \dfrac{-2x}{1}$

$= + \dfrac{15x\!\!\!/y\!\!\!/ \times 1 \times 2x}{1 \times 5x\!\!\!/y\!\!\!/ \times 1}$

$= + 6x$

② $8mn \div (-3m) \div 6mn$

$= \dfrac{8mn}{1} \div \dfrac{-3m}{1} \div \dfrac{6mn}{1}$

$= - \dfrac{8m\!\!\!/n \times 1 \times 1}{1 \times 3m \times 6mn\!\!\!/}$

$= - \dfrac{4}{9m}$

③ $15x^2y^3 \div 5xy^4 \times (3x)^2$

$= 15x^2y^3 \div 5xy^4 \times 9x^2$

$= \dfrac{15x^2y^3}{1} \div \dfrac{5xy^4}{1} \times \dfrac{9x^2}{1}$

$= \dfrac{15x\!\!\!/x\!\!\!/y\!\!\!/y\!\!\!/ \times 1 \times 9xx}{1 \times 5x\!\!\!/y\!\!\!/y\!\!\!/y\!\!\!/y \times 1}$

$= \dfrac{4x^3}{y}$

④ $16a^3b^2 \div (3a)^2 \div (-2b)^2$

$= 16a^3b^2 \div 9a^2 \div 4b^2$

$= \dfrac{16a^3b^2}{1} \div \dfrac{9a^2}{1} \div \dfrac{4b^2}{1}$

$= \dfrac{16a\!\!\!/a\!\!\!/a\!\!\!/b\!\!\!/b\!\!\!/ \times 1 \times 1}{1 \times 9a\!\!\!/a\!\!\!/ \times 4b\!\!\!/b\!\!\!/}$

$= \dfrac{4a}{9}$

⑤ $6mn^3 \div \dfrac{2}{3}m^2n \times (-2m)^2$

$= 6mn^3 \div \dfrac{2}{3}m^2n \times 4m^2$

$= \dfrac{6mn^3}{1} \div \dfrac{2}{3}\dfrac{m^2n}{} \times \dfrac{4m^2}{1}$

$= \dfrac{6m\!\!\!/n\!\!\!/nn \times 3 \times 4m\!\!\!/m}{1 \times 2m\!\!\!/m\!\!\!/n\!\!\!/ \times 1}$

$= 36mn^2$

B コース

① $24a^5b^3 \div (-3a^2b) \div 10ab$

$= \dfrac{24a^5b^3}{1} \div \dfrac{(-3a^2b)}{1} \div \dfrac{10ab}{1}$

$= - \dfrac{24a\!\!\!/a\!\!\!/a\!\!\!/aab\!\!\!/bb \times 1 \times 1}{1 \times 3a\!\!\!/ab \times 10ab}$

$= - \dfrac{4a^2b}{5}$

② $18ab \times (-2ab) \div 9ab$

$= \dfrac{18ab}{1} \times \dfrac{(-2ab)}{1} \div \dfrac{9ab}{1}$

$= - \dfrac{18a\!\!\!/b\!\!\!/ \times 2ab \times 1}{1 \times 1 \times 9a\!\!\!/b\!\!\!/}$

$= - 4ab$

③ $-9m^2n^5 \div (-6mn^4) \div 3m^2n$

$= \dfrac{-9m^2n^5}{1} \div \dfrac{-6mn^4}{1} \div \dfrac{3m^2n}{1}$

$= \dfrac{9m\!\!\!/m\!\!\!/n\!\!\!/n\!\!\!/n\!\!\!/n\!\!\!/n \times 1 \times 1}{1 \times 6mn\!\!\!/n\!\!\!/n\!\!\!/n\!\!\!/ \times 3m\!\!\!/m\!\!\!/n}$

$= \dfrac{1}{2m}$

④ $-2x^3y \times (-12xy) \div (-8xy^3)$

$= \dfrac{-2x^3y}{1} \times \dfrac{-12xy}{1} \div \dfrac{-8xy^3}{1}$

$= - \dfrac{2x\!\!\!/xxy\!\!\!/ \times 12xy\!\!\!/ \times 1}{1 \times 1 \times 8x\!\!\!/y\!\!\!/y\!\!\!/y}$

$= - \dfrac{3x^3}{y}$

⑤ $-2xy \times (-3y)^3 \div (6x)^2$

$= -2xy \times (-27y^3) \div 36x^2$

$= \dfrac{-2xy}{1} \times \dfrac{(-27y^3)}{1} \div \dfrac{36x^2}{1}$

$= \dfrac{2xy\!\!\!/ \times 27yyy \times 1}{1 \times 1 \times 36x\!\!\!/x}$

$= \dfrac{3y^4}{2x}$

C コース

① $\dfrac{9}{10}m^3n \times 2n \div 3m^2$

$= \dfrac{9m^3n}{10} \times \dfrac{2n}{1} \div \dfrac{3m^2}{1}$

$= \dfrac{9m\!\!\!/m\!\!\!/mn \times 2n \times 1}{10 \times 1 \times 3m\!\!\!/m}$

$= \dfrac{3mn^2}{5}$

② $-\dfrac{2}{3}ab^3 \times 3a \div \dfrac{1}{6}b^4$

$= - \dfrac{2ab^3}{3} \times \dfrac{3a}{1} \div \dfrac{b^4}{6}$

$= - \dfrac{2ab\!\!\!/b\!\!\!/b\!\!\!/ \times 3a \times 6}{3 \times 1 \times b\!\!\!/b\!\!\!/b\!\!\!/b}$

$= - \dfrac{12a^2}{b}$

③ $-\dfrac{8}{15}x^3y^4 \div (-2x)^2 \div \dfrac{2}{5}y^2$

$= - \dfrac{8}{15}x^3y^4 \div (4x^2) \div \dfrac{2}{5}y^2$

$= - \dfrac{8x^3y^4}{15} \div \dfrac{4x^2}{1} \div \dfrac{2y^2}{5}$

$= - \dfrac{8x\!\!\!/x\!\!\!/x\!\!\!/y\!\!\!/y\!\!\!/yy \times 1 \times 5}{15 \times 4x\!\!\!/x \times 2y\!\!\!/y\!\!\!/}$

$= - \dfrac{xy^2}{3}$

④ $10a^2x \div (-\dfrac{5}{8}ax) \times (-a)^2$

$= 10a^2x \div (-\dfrac{5}{8}ax) \times a^2$

$= \dfrac{10a^2x}{1} \div (-\dfrac{5ax}{8}) \times \dfrac{a^2}{1}$

$= - \dfrac{10a\!\!\!/ax \times 8 \times aa}{1 \times 5a\!\!\!/x \times 1}$

$= - 16a^3$

⑤ $6x^2y^3 \div (2x)^2 \div (-\dfrac{3}{4}xy)$

$= 6x^2y^3 \div 4x^2 \div (-\dfrac{3}{4}xy)$

$= \dfrac{6x^2y^3}{1} \div \dfrac{4x^2}{1} \div (-\dfrac{3xy}{4})$

$= - \dfrac{6x\!\!\!/x\!\!\!/y\!\!\!/yy \times 1 \times 4}{1 \times 4x\!\!\!/x \times 3x\!\!\!/y\!\!\!/}$

$= - \dfrac{2y^2}{x}$