To divide a monomial by another monomial, follow the steps below.

(1) Divide the signs of the monomials.

(2) Divide the coefficients of the monomials.

(3) Divide the like variables. Use the rule for the division of variables with exponents. To do this, subtract the exponents of like variables.

Practice 7. Divide.

(a) $32x^4y^5z^3 \div 8x^2y^2z^2$

(b) $-65mn^6x^4 \div 13mn^3x^2$

(c) $(-121ab^5c^4) \div (-11ab^3c^2)$

Solution.
(a) $32x^4y^5z^3 \div 8x^2y^2z^2 = 4(x^{4-2})(y^{5-2})(z^{3-2})$

$= 4x^2y^3z$

(b) $-65mn^6x^4 \div 13mn^3x^2 = (-65 \div 13)(m^{1-1})(n^{6-3})(x^{4-2})$

$= -5n^3x^2$

(c) $(-121ab^5c^4) \div (-11ab^3c^2) = [(-121) \div (-11)](a^{1-1})(b^{5-3})(c^{4-2})$

$= 11b^2c^2$

Practical Exercise 2. Divide.

(a) $-x^6y^5z^7 \div 8x^2y^2z^2$

(b) $-625m^4n^6x^4 \div 25m^4n^3x^4$

(c) $(-120a^4b^5c^4) \div (-24ab^3c^2)$

Answer.

(a) $-\frac{1}{8}x^4y^3z^5$

(b) $-25n^3$

(c) $5a^3b^2c^2$