

Section 4.2 Extra Practice

- Write each expression with positive exponents.
 - c^{-4}
 - mn^{-2}
 - $3x^{-3}$
 - $4m^3n^{-2}$
 - $-2x^{-4}$
 - $-5x^{-3}y^{-2}$
- Simplify each expression. State the answer using positive exponents.
 - $(2^{-2})(2^3)$
 - $(3^0)(3^{-3})$
 - $\frac{5^3}{5^{-4}}$
 - $\frac{(3^{-7})(4)}{(3^9)(4^3)}$
 - $(2^4)^3$
 - $(3^2)^{-4}$
 - $[(4)(2^{-3})]^{-2}$
 - $\left(\frac{6^2}{5^{-3}}\right)^{-3}$
- Simplify each expression. State the answer using positive exponents.
 - $(2xy^2)(3x^{-1}y^0)$
 - $(-3m^2n)(-4m^4n^{-2})$
 - $\frac{m^3n^{-2}}{(mn^4)(m^5n^2)}$
 - $(-3xy^4)^2$
 - $(4xy^{-3})^{-2}$
 - $-4x(5x)^3$
 - $\left(\frac{6mn^3}{4m^2n}\right)^2$
 - $\left(\frac{3x}{-2y^2}\right)^{-2}$
- Simplify, then evaluate. Give the result as a fraction where necessary.
 - 5^{-2}
 - 7^0
 - $\left(\frac{6}{7}\right)^{-2}$
 - $-(-3)^2$
 - $\frac{1}{(-3)^{-2}}$
 - $3^{-1} + 4^{-1}$
 - $-5(m^0 + n^0)^2$
 - $\frac{5^{-1} + 5^{-2}}{5^{-3}}$
 - $\left[\left(\frac{3}{4}\right)^{-2}\right]^3$
- A bacterial culture in a lab has 500 cells. The number of cells doubles every hour. This relationship can be modelled by the equation $N = 500(2)^h$, where N is the estimated number of bacteria cells and h is the time in hours.
 - If the conditions remain ideal, how many cells will there be after 6 h?
 - How many cells were there 2 h ago?
- Dana evaluated the expression $\left(\frac{1}{2}\right)^{-3} = 8$. Is she correct? Justify your answer.