

MEMORIAL UNIVERSITY OF NEWFOUNDLAND

DEPARTMENT OF MATHEMATICS AND STATISTICS

SECTION 1.2

Math 1090 Worksheet

FALL 2026

SOLUTIONS

1. (a) $(4x^5y^2)(3xy^{-4}) = (4 \cdot 3)(x^5 \cdot x)(y^2 \cdot y^{-4}) = 12x^6y^{-2} = \frac{12x^6}{y^2}$

(b) $\left(\frac{x}{y^{-3}}\right)^{-2} = \left(\frac{y^{-3}}{x}\right)^2 = \frac{y^{-6}}{x^2} = \frac{1}{x^2y^6} = x^{-2}y^{-6}$

(c) $(x^{-1}y^3)^2(3x^0y)^{-3} = \frac{(x^{-1}y^3)^2}{[3(1)y]^3} = \frac{x^{-2}y^6}{27y^3} = \frac{y^3}{27x^2}$

(d) $\frac{x^{-2}y^{-2}}{(3xy)^{-3}} = \frac{(3xy)^3}{x^2y^2} = \frac{27x^3y^3}{x^2y^2} = 27xy$

(e) $\left(\frac{xy^2}{x^2y}\right)^4 \left(\frac{x^3y^{-2}}{x^{-3}y^2}\right)^{-1} = (x^{-1}y)^4 \left(\frac{x^{-3}y^2}{x^3y^{-2}}\right) = x^{-4}y^4 \cdot x^{-6}y^4 = x^{-10}y^8 = \frac{y^8}{x^{10}}$

(f) $(x^{-4} - 4x^{-2})^{-1} = \frac{1}{x^{-4} - 4x^{-2}} = \frac{1}{\frac{1}{x^4} - \frac{4}{x^2}} = \frac{1}{\frac{1}{x^4} - \frac{4x^2}{x^4}} = \frac{1}{\frac{1-4x^2}{x^4}} = \frac{x^4}{1-4x^2}$