

Eleventh Set of Homework for Math 05

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Please note: You should fully justify your answers.

1 Exponents

1. Simplify and give your answer using positive exponents:

(a) x^2y^{-4}

(b) $(3x^3y^{-2})^3$

(c) $(-2x^{-3}y^{-1}w^2)^4$

(d) $(2x^4y^{-4}z^{-3})^{-3}$

(e) $(-3x^2y^{-5})^{-3}$

(f) $\frac{4x^{-3}y^4}{12x^5y^{-4}}$

(g) $\left(\frac{x^3y^4z^{-7}}{x^4y^{-1}z^{-6}}\right)^2$

(h) $\left(\frac{18x^{-5}y^{-4}z^{10}}{4x^{-3}y^{-2}z^8}\right)^{-3}$

2 Scientific Notation

1. Write the following in scientific notation:

(a) 23.45

(b) 3600000

(c) 0.00000345

(d) 0.01111

(e) 24×10^8

(f) 24×10^{-9}

(g) 0.79×10^{-5}

(h) 124.27×10^6

2. Calculate and give your answer using scientific notation:

(a) $(5 \times 10^6)(3 \times 10^{-3})$

(b) $(1.2 \times 10^2)(3.4 \times 10^5)$

(c) $(1.7 \times 10^{-5})(6.3 \times 10^8)$

(d) $\frac{3 \times 10^{-3}}{5 \times 10^{-6}}$

(e) $\frac{18 \times 10^5}{24 \times 10^{10}}$

(f) $\frac{(24 \times 10^5)(2 \times 10^3)}{3 \times 10^{-4}}$

(g) $\frac{(20 \times 10^{-7})(6 \times 10^9)}{(8 \times 10^{-3})(3 \times 10^5)}$