

MEMORIAL UNIVERSITY OF NEWFOUNDLAND

DEPARTMENT OF MATHEMATICS AND STATISTICS

SECTION 4.1

Math 1090 Worksheet

FALL 2009

For practise only. Not to be submitted.

1. Evaluate each of the following, if possible.

(a) $25^{\frac{3}{2}}$

(b) $(-8)^{\frac{5}{3}}$

(c) $(-16)^{\frac{7}{4}}$

(d) $81^{-\frac{3}{4}}$

(e) $\left(\frac{1}{125}\right)^{\frac{2}{3}}$

(f) $\left(\frac{49}{9}\right)^{-\frac{3}{2}}$

2. Use the laws of exponents to express each of the following in simplified form.

(a) $\left(\frac{x}{y^{-3}}\right)^{-2}$

(b) $(x^{-1}y^3)^2(3x^0y)^{-3}$

(c) $\frac{x^{-2}y^{-2}}{(3xy)^{-3}}$

(d) $(x^{-4} - 4x^{-2})^{-1}$

3. Assuming $x > 0$ and $y > 0$ where necessary, simplify each of the following.

(a) $\sqrt{8xy^3} \cdot \sqrt{2xy}$

(b) $\sqrt[3]{81x^7}$

(c) $\frac{\sqrt[4]{32x}}{\sqrt[4]{2x^5}}$

(d) $\sqrt[3]{27\sqrt{64x}}$