Al Moattasem International School

Jubail

Level 8 – Revision 5

Indices Revision Work Sheet 1

Chapter 4

Topic Indices

To simplify fractional exponents, rewrite the expression as a radical raised to a power. The denominator of the fractional exponent is the root and the numerator is the power.

In other words: $x^{m/n} = \sqrt[n]{x^m} = \left(\sqrt[n]{x}\right)^m$

1 Write $27^{2/3}$ as a radical and simplify.

2 Write $\sqrt[4]{y^6}$ using a fractional exponent.

3 Simplify $\sqrt[3]{8x^5y^6z^{11}}$.

4. Simplify

A. $(x^3)^2$

B. $(3^2)^4$

C. $(z^5)^2$

5. Simplify

A. $(2a)^3 =$

B. $(6x^3)^2$

C. $\left(\frac{x^2}{y}\right)^4 =$

D. $\left(\frac{2x}{3y^2}\right)^3$

6. Simplify

A. $x^{-3} = \frac{1}{x^3}$

B. $4^{-2} = \frac{1}{4^2} = \frac{1}{16}$

C. $-4x^5y^{-2} = \frac{-4x^5}{y^2}$

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

E. $(3x^{-2}y)(-2xy^{-3})$

F. $\frac{a^{-2}b^3}{c^{-4}d^{-1}}$

G. $(-2x^2y^{-4})^{-2}$

7) Write in index form

a) $2 \times 2 \times 2 \times 2$

b) $7 \times 2 \times 2$

c) $\frac{5\times5\times5\times5\times5\times5}{5\times5\times5\times5}$

d) $5 \times 7 \times 5$

8) Simplify

88^0