**Exponent Practice**

**Simplify each expression; express all remaining exponents as positives.**

**a) b) c) d)**

**e) f) g) h)**

**Rational Exponents**

**What does it mean to have a fraction as an exponent?**

**For example, what is meant by the expression ?**

**Intuitively, it would make sense that this quantity would be somewhere between and ; that is, must be between the**

**values \_\_\_ and \_\_\_\_. When we enter into the calculator, we get a value of \_\_\_\_ which is indeed between and (but not in the middle).**

**To evaluate without using a calculator, we need to make use of two important mathematical rules:**

1. **The expression means or the nth root of x.**

**eg; or**

1. **All powers can be written as a power of a power;**

**eg; can equivalently be written as**

**Using the above two rules we can evaluate as follows:**

**or**

**= =**

**= =**

**= =**

**Examples**

**Evaluate each expression.**

**a) b) c)**

**d) e) f)**

**Homework: pg 229 # 1-3, 4bc, 5acf, 8, 10, 13-15**