1. Fractional exponents can be simpliefied using the following formula.

$$a^{b/c} = \sqrt[c]{(a)^b}$$

Applying this to our problem, we will get:

$$\sqrt[3]{(36)^2}$$

$$\sqrt[3]{(1,296)} = 10.90$$

2. $\dfrac{7^{\frac{7}{4}}}{7^{\frac{3}{4}}}$

$= 7^{\frac{7}{4} - \frac{3}{4}}$ We would subtract the numerators.

$= 7^{\frac{4}{4}} = 7$

3. $(\frac{4}{15})^{-3}$

A negative exponent of a fraction can be made positive by taking the reciprocal of the fraction.

$(\frac{4}{15})^{-3} = (\frac{15}{4})^3 = \frac{3375}{64} = 52\frac{47}{64}$