

Lesson 109: More on fractional exponents

1.) Expand $(2x^{\frac{1}{2}}y^{\frac{1}{4}}z)^3$

$$= 8x^{\frac{3}{2}}y^{\frac{3}{4}}z^3$$

Remember:
 $(x^n)^m = x^{nm}$
 $x^h x^m = x^{n+m}$

2.) $(x^{\frac{1}{2}} + y^{\frac{1}{2}})^2$

$$(x^{\frac{1}{2}} + y^{\frac{1}{2}})(x^{\frac{1}{2}} + y^{\frac{1}{2}})$$

$$x + x^{\frac{1}{2}}y^{\frac{1}{2}} + x^{\frac{1}{2}}y^{\frac{1}{2}} + y$$

$$x + 2x^{\frac{1}{2}}y^{\frac{1}{2}} + y$$

3.) $(x^{\frac{1}{4}} + y^{-\frac{1}{4}})^2$

$$(x^{\frac{1}{4}} + y^{-\frac{1}{4}})(x^{\frac{1}{4}} + y^{-\frac{1}{4}})$$

$$x^{\frac{1}{2}} + 2x^{\frac{1}{4}}y^{-\frac{1}{4}} + y^{-\frac{1}{2}}$$