# SPIRAL REVIEW #8.1 Key EXPONENTS


1. Determine the solution set of $3^{x^2+2} = 9^2$

$3^{x^2+2} = (3^2)^2$

$x^2+2 = 4$

$x^2 = 2 \rightarrow x = \pm\sqrt{2}$

2. Solve for $x$: $2x^{5/3} + 1 = 487$

$2x^{\frac{5}{3}} + 1 = 487$

$2x^{\frac{5}{3}} = 486$

$\left(x^{\frac{5}{3}}\right)^{\frac{3}{5}} = (243)^{\frac{3}{5}}$

$x = 27$

3. Simplify the expression $(8x^{-9})^{\frac{2}{3}}$ and write your answer using a positive exponent.

$8^{\frac{2}{3}} \cdot x^{-9\left(\frac{2}{3}\right)}$

$4 \cdot x^{-6} = \frac{4}{x^6}$

4. Explain how to rewrite $\left(6^{\frac{2}{3}}\right)^3$ in radical form.

multiply!

$6^2 = 36$

5. Simplify $\left(\frac{x^3}{x^{\frac{-1}{2}}}\right)^{\frac{1}{4}}$ using only positive exponents.

$\left(x^{\frac{7}{2}}\right)^{\frac{1}{4}} = x^{\frac{7}{8}}$