BECA / Huson / Algebra 2: Polynomials Jan 2023 Regents Name:
6 May 2025

Quiz: Regents problems ***N.RN.2 Radicals and rational exponents***

1. Rewrite each expression as a radical, simplify.

   (a) $7^{\frac{1}{2}} =$

   (b) $(8x)^{-\frac{2}{3}} =$

2. Rewrite each expression as a fractional exponent. $x > 0$

   (a) $\sqrt[3]{5} =$

   (b) $\sqrt[2]{x^3} =$

3. Given $x > 0$, the expression $\dfrac{x^{\frac{1}{2}}}{x^{\frac{1}{5}}}$ can be rewritten as

   (a) $\sqrt[3]{x}$

   (b) $\sqrt[10]{x^3}$

   (c) $\dfrac{1}{\sqrt[10]{x^3}}$

   (d) $\sqrt[3]{x^{10}}$

4. Given $a > 0$, solve the equation $a^{x+2} = \sqrt[2]{a^3}$ for x algebraically.

5. Solve the equation $\sqrt{x^2 + 5x} - 5 = x$ algebraically.