# Algebra 2 Review 7.4 and 7.5 Name:

**Write each expression in radical form.**

 $\left(2x\right)^{\frac{1}{3}}$ $a^{\frac{4}{5}}$ $d^{2.5}$

**Write each expression in exponential form.**

 $\sqrt{x^{7}}$ $\sqrt[3]{m}$ $\sqrt[4]{\left(5ab\right)^{3}}$

**Simplify each number.**

 $8^{\frac{2}{3}}$ $13^{0}$

 $\left(\frac{1}{16}\right)^{\frac{1}{4}}$ $32^{-0.4}$

**Simplify each expression. Assume that all variables are positive.**

 $x^{\frac{1}{2}}∙x^{\frac{1}{3}}$ $\left(\frac{y^{3}}{y^{-1}}\right)^{-\frac{1}{4}}$

 $\left(9x^{6}y^{-2}\right)^{\frac{1}{2}}$ $\left(a^{\frac{2}{3}}b^{-\frac{3}{4}}\right)^{12}$

**Solve. Check for extraneous solutions.**

 $\sqrt[3]{2x-4}=-2$ $4\sqrt{x}-1=3$

 $\left(2x+1\right)^{\frac{1}{2}}=-3$ $5\left(2x+1\right)^{\frac{1}{3}}=5$

 $2x^{\frac{3}{4}}=16$ $\sqrt{x+1}=x+1$

 $\left(4x+2\right)^{\frac{1}{2}}=\left(3x+4\right)^{\frac{1}{2}}$ $2\sqrt{x-1}=\sqrt{26+x}$

**Write each expression in radical form.**

 $\left(2x\right)^{\frac{1}{3}}$ **=** $\sqrt[3]{2x}$ $a^{\frac{4}{5}}$ **=** $\sqrt[5]{a^{4}}$ **or** $\left(\sqrt[5]{a}\right)^{4}$ $d^{2.5}$ **=** $\sqrt{d^{5}}$ **or** $\left(\sqrt{d}\right)^{5}$

**Write each expression in exponential form.**

 $\sqrt{x^{7}}$ $=x^{\frac{7}{2}}$ $\sqrt[3]{m}$ $=m^{\frac{1}{3}}$ $\sqrt[4]{\left(5ab\right)^{3}}$ $=\left(5ab\right)^{\frac{3}{4}}$

**Simplify each number.**

 $8^{\frac{2}{3}}$ **=** $4$ $13^{0}$ **=** $1$

 $\left(\frac{1}{16}\right)^{\frac{1}{4}}$ **=** $\frac{1}{2}$ $32^{-0.4}$ **=** $\frac{1}{4}$

**Simplify each expression. Assume that all variables are positive.**

 $x^{\frac{1}{2}}∙x^{\frac{1}{3}}$ **=** $x^{\frac{5}{6}}$ $\left(\frac{y^{3}}{y^{-1}}\right)^{-\frac{1}{4}}$ **=** $\frac{1}{y}$

 $\left(9x^{6}y^{-2}\right)^{\frac{1}{2}}$  **=** $\frac{3x^{3}}{y}$ $\left(a^{\frac{2}{3}}b^{-\frac{3}{4}}\right)^{12}$ **=** $\frac{a^{8}}{b^{9}}$

**Solve. Check for extraneous solutions.**

 $\sqrt[3]{2x-4}=-2$ $4\sqrt{x}-1=3$

 $x=-2$$x=1$

 $\left(2x+1\right)^{\frac{1}{2}}=-3$ $5\left(2x+1\right)^{\frac{1}{3}}=5$

 $no solution$$x=0$

 $2x^{\frac{3}{4}}=16$ $\sqrt{x+1}=x+1$

 $x=16$$x=0$ **and**  $x=-1$

 $\left(4x+2\right)^{\frac{1}{2}}=\left(3x+4\right)^{\frac{1}{2}}$ $2\sqrt{x-1}=\sqrt{26+x}$

 $x=2$$x=10$