11.1-11.2 Practice:

Translate the expression with rational exponents into a radical expression and simplify, if possible.

1. $x^{\frac{3}{9}}$
2. $\left(\frac{625}{16}\right)^{\frac{3}{4}}$
3. $\left(16\right)^{0.25}$

Translate the radical expression into an expression with rational exponents and simplify, if possible.

1. $\sqrt{y^{6}}$
2. $\left(\sqrt[9]{27z}\right)^{3}$
3. $\sqrt[3]{64^{4}}$

For 11–16, simplify the expression. Assume that all variables are positive. All exponents should be positive in simplified form. Rationalize any irrational denominators.

1. $\left(\frac{64^{\frac{5}{3}}a^{\frac{4}{3}}}{64^{\frac{7}{9}}}\right)^{\frac{3}{4}}$
2. $\frac{\sqrt{x^{3}y^{5}}}{x^{\frac{1}{2}}y^{\frac{3}{2}}}$
3. $\sqrt{6}∙\sqrt[3]{36}$
4. $\frac{\sqrt[4]{30x^{3}y}}{\sqrt[4]{6xy^{3}}}$
5. $\frac{125^{\frac{2}{9}}∙125^{\frac{1}{9}}}{5^{\frac{1}{4}}} $
6. $\frac{\sqrt[6]{8}∙\sqrt[6]{16}}{\sqrt[6]{2}}$
7. $\sqrt[3]{250x^{3}y^{8}z^{4}}$
8. $\sqrt{\frac{9x^{4}y}{32z^{3}}}$