

Name: Key

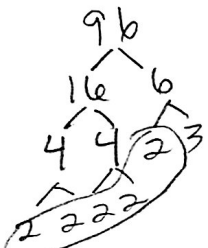
Date: _____

Rationalizing Denominators

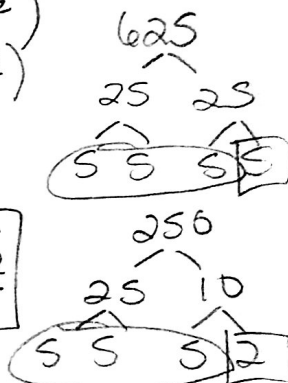
$$1. \frac{5}{\sqrt[3]{9}} = \frac{5}{\sqrt[3]{3^2}} \cdot \frac{\sqrt[3]{3}}{\sqrt[3]{3}} = \frac{5\sqrt[3]{3}}{3}$$

$$2. \frac{7}{\sqrt[3]{4x}} = \frac{7}{\sqrt[3]{2^2x}} \cdot \frac{\sqrt[3]{2x^2}}{\sqrt[3]{2x^2}} = \frac{7\sqrt[3]{2x^2}}{2x}$$

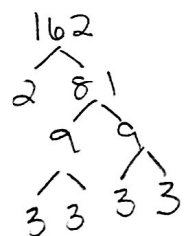
$$3. \frac{\sqrt[5]{12}}{4\sqrt[5]{4}} = \frac{\sqrt[5]{12}}{4\sqrt[5]{2^2}} \cdot \frac{\sqrt[5]{2^3}}{\sqrt[5]{2^3}} = \frac{\sqrt[5]{96}}{4 \cdot 2} = \frac{\sqrt[5]{96}}{8} = \frac{\sqrt[5]{3}}{4}$$



$$4. \frac{\sqrt[3]{10}}{\sqrt[3]{625}} = \frac{\sqrt[3]{10}}{5\sqrt[3]{5}} \cdot \frac{\sqrt[3]{5^2}}{\sqrt[3]{5^2}} = \frac{\sqrt[3]{250}}{25} = \frac{\sqrt[3]{5 \cdot 5 \cdot 2}}{25} = \frac{\sqrt[3]{2}}{5}$$

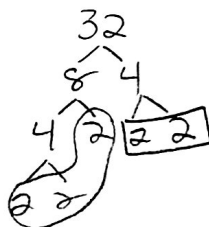


$$5. \frac{\sqrt[5]{2}}{3\sqrt[5]{162}} = \frac{1}{3} \cdot \frac{\sqrt[5]{1}}{\sqrt[5]{81}} = \frac{1}{3\sqrt[5]{81}} = \frac{1}{3\sqrt[5]{3^4}} \cdot \frac{\sqrt[5]{3}}{\sqrt[5]{3}} = \frac{\sqrt[5]{3}}{9}$$



$$6. \frac{3\sqrt[4]{4}}{2\sqrt[4]{8}} = \frac{3\sqrt[4]{2^2}}{2\sqrt[4]{2^3}} \cdot \frac{\sqrt[4]{2}}{\sqrt[4]{2}} = \frac{3\sqrt[4]{8}}{4}$$

$$7. \frac{\sqrt[4]{5}}{4\sqrt[4]{27}} = \frac{\sqrt[4]{5}}{4\sqrt[4]{3^3}} \cdot \frac{\sqrt[4]{3}}{\sqrt[4]{3}} = \frac{\sqrt[4]{15}}{12}$$



$$8. \frac{\sqrt[3]{10}}{\sqrt[3]{32}} = \frac{\sqrt[3]{10}}{2\sqrt[3]{4}} = \frac{\sqrt[3]{10}}{2\sqrt[3]{2^2}} \cdot \frac{\sqrt[3]{2}}{\sqrt[3]{2}} = \frac{\sqrt[3]{20}}{4}$$

$$9. \frac{(-5+5\sqrt[4]{5})(4\sqrt[6]{3})}{3\sqrt[4]{6}} = \frac{-5\sqrt[4]{216} + 5\sqrt[4]{1080}}{3 \cdot 6} = \frac{-5\sqrt[4]{216} + 5\sqrt[4]{1080}}{18}$$

$$10. \frac{3+\sqrt[3]{3}}{\sqrt[3]{9}} = \frac{(3+\sqrt[3]{3})\sqrt[3]{3}}{\sqrt[3]{3^2} \cdot \sqrt[3]{3}} = \frac{3\sqrt[3]{3} + \sqrt[3]{9}}{3}$$