

Review Exercise Set 17

Exercise 1: Simplify the expression.

$$\sqrt{32x^6y^{10}} =$$

Exercise 2: Simplify the expression.

$$\sqrt[3]{\frac{16x^8}{3y^5}} =$$

Exercise 3: Simplify the expression.

$$\sqrt[3]{54a^7b^{10}} =$$

Exercise 4: Simplify the expression.

$$\sqrt[3]{\frac{5}{4}} =$$

Exercise 5: Simplify the expression.

$$\sqrt[4]{\frac{32x^9y^{15}}{2xy^5}} =$$

Review Exercise Set 17 Answer Key

Exercise 1: Simplify the expression.

$$\begin{aligned}\sqrt{32x^6y^{10}} &= \sqrt{16x^6y^{10}} \times 2 \\ &= 4x^3y^5\sqrt{2}\end{aligned}$$

Exercise 2: Simplify the expression.

$$\begin{aligned}\frac{\sqrt[3]{16x^8}}{\sqrt[3]{3y^5}} &= \frac{\sqrt[3]{16x^8}}{\sqrt[3]{3y^5}} \\ &= \frac{\sqrt[3]{8x^6} \times 2x^2}{\sqrt[3]{y^3} \times 3y^2} \\ &= \frac{2x^2\sqrt[3]{2x^2}}{y\sqrt[3]{3y^2}} \\ &= \frac{2x^2\sqrt[3]{2x^2}}{y\sqrt[3]{3y^2}} \times \frac{\sqrt[3]{9y}}{\sqrt[3]{9y}} \\ &= \frac{2x^2\sqrt[3]{18x^2y}}{y\sqrt[3]{27y^3}} \\ &= \frac{2x^2\sqrt[3]{18x^2y}}{y \times 3y} \\ &= \frac{2x^2\sqrt[3]{18x^2y}}{3y^2}\end{aligned}$$

Exercise 3: Simplify the expression.

$$\begin{aligned}\sqrt[3]{54a^7b^{10}} &= \sqrt[3]{27a^6b^9} \times 2ab \\ &= 3a^2b^3\sqrt[3]{2ab}\end{aligned}$$

Exercise 4: Simplify the expression.

$$\begin{aligned}\sqrt[3]{\frac{5}{4}} &= \frac{\sqrt[3]{5}}{\sqrt[3]{2^2}} \\ &= \frac{\sqrt[3]{5}}{\sqrt[3]{2^2}} \times \frac{\sqrt[3]{2}}{\sqrt[3]{2}} \\ &= \frac{\sqrt[3]{10}}{\sqrt[3]{2^3}} \\ &= \frac{\sqrt[3]{10}}{2}\end{aligned}$$

Exercise 5: Simplify the expression.

$$\begin{aligned}\sqrt[4]{\frac{32x^9y^{15}}{2xy^5}} &= \sqrt[4]{16x^{9-1}y^{15-5}} \\ &= \sqrt[4]{2^4x^8y^{10}} \\ &= 2x^2y^2\sqrt[4]{y^2}\end{aligned}$$