

Precalculus Algebra Review Worksheet #6 Radicals Selected Solutions

Express each of the following radicals in simplest form.

$$7. \quad \frac{\sqrt{80}}{\sqrt{16} \sqrt{5}} = \frac{4\sqrt{5}}{\sqrt{16} \sqrt{5}}$$

$$8. \quad \frac{\sqrt[3]{80}}{\sqrt[3]{8} \sqrt[3]{10}} = \frac{2\sqrt[3]{10}}{\sqrt[3]{8} \sqrt[3]{10}}$$

$$11. \quad \frac{\sqrt{x^5}}{\sqrt{x^4} \sqrt{x}} = \frac{x^2 \sqrt{x}}{\sqrt{x^4} \sqrt{x}}$$

$$12. \quad \frac{\sqrt[3]{x^5}}{\sqrt[3]{x^3} \sqrt[3]{x^2}} = \frac{x \sqrt[3]{x^2}}{\sqrt[3]{x^3} \sqrt[3]{x^2}}$$

$$15. \quad \frac{\sqrt{72x^4}}{\sqrt{36x^4} \sqrt{2}} = \frac{6x^2 \sqrt{2}}{\sqrt{36x^4} \sqrt{2}}$$

$$16. \quad \frac{\sqrt[3]{72x^4}}{\sqrt[3]{8x^3} \sqrt[3]{9x}} = \frac{2x \sqrt[3]{9x}}{\sqrt[3]{8x^3} \sqrt[3]{9x}}$$

$$25. \quad \sqrt{\frac{4}{5}} =$$

$$\frac{\sqrt{4}}{\sqrt{5}} \frac{\sqrt{5}}{\sqrt{5}} = \boxed{\frac{2\sqrt{5}}{5}}$$

$$26. \quad \sqrt[3]{\frac{4}{5}} =$$

$$\frac{\sqrt[3]{4}}{\sqrt[3]{5}} \frac{\sqrt[3]{25}}{\sqrt[3]{25}} = \boxed{\frac{\sqrt[3]{100}}{5}}$$

$$29. \quad \sqrt{\frac{5x^2}{9y^3}} =$$

$$\frac{\sqrt{5x^2} \sqrt{y}}{\sqrt{9y^3} \sqrt{y}} = \frac{\sqrt{x^2} \sqrt{5y}}{\sqrt{9y^4}} = \boxed{\frac{|x| \sqrt{5y}}{3y^2}}$$

$$30. \quad \sqrt[3]{\frac{5x^2}{9y^3}} =$$

$$\frac{\sqrt[3]{5x^2} \sqrt[3]{3}}{\sqrt[3]{9y^3} \sqrt[3]{3}} = \frac{\sqrt{15x^2}}{\sqrt{27y^3}} = \boxed{\frac{\sqrt{15x^2}}{3y}}$$