

Intermediate Algebra Skill

Dividing Radical Expressions: Index 2 or Higher

Divide and Simplify. (Assume the variables represent nonnegative numbers)

$$1) \frac{\sqrt{35x}}{\sqrt{7x}}$$

$$2) \frac{\sqrt{28y}}{\sqrt{4y}}$$

$$3) \frac{\sqrt[3]{270}}{\sqrt[3]{10}}$$

$$4) \frac{\sqrt[3]{40}}{\sqrt[3]{5}}$$

$$5) \frac{\sqrt{40xy^3}}{\sqrt{8x}}$$

$$6) \frac{\sqrt{56ab^3}}{\sqrt{7a}}$$

$$7) \frac{\sqrt[3]{96a^4b^2}}{\sqrt[3]{12a^2b}}$$

$$8) \frac{\sqrt[3]{189x^5y^7}}{\sqrt[3]{7x^2y^2}}$$

$$9) \frac{\sqrt{100ab}}{5\sqrt{2}}$$

$$10) \frac{\sqrt{75ab}}{3\sqrt{3}}$$

$$11) \frac{\sqrt[4]{48x^9y^{13}}}{\sqrt[4]{3xy^{-2}}}$$

$$12) \frac{\sqrt[5]{64a^{11}b^{28}}}{\sqrt[5]{2ab^{-2}}}$$

$$13) \frac{\sqrt[3]{a^2}}{\sqrt[4]{a}}$$

$$14) \frac{\sqrt[4]{x^2y^3}}{\sqrt[3]{xy}}$$

Rationalize the denominators.

$$15) \sqrt{\frac{5}{7}}$$

$$17) \sqrt[3]{\frac{16}{9}}$$

$$19) \frac{\sqrt[3]{5y^4}}{\sqrt[3]{6x^4}}$$

$$16) \frac{6\sqrt{5}}{5\sqrt{3}}$$

$$18) \frac{\sqrt[3]{3a}}{\sqrt[3]{5c}}$$

$$20) \sqrt[3]{\frac{2}{x^2y}}$$

Answers to Dividing Radical Expressions: Index 2 or Higher

1) $\sqrt{5}$

2) 2

3) 3

4) 2

5) $y\sqrt{5y}$

6) $2b\sqrt{2b}$

7) $2\sqrt[3]{a^2b}$

8) $2xy\sqrt[3]{y^2}$

9) $\sqrt{2ab}$

10) $\frac{5}{3}\sqrt{ab}$

11) $2x^2y^3\sqrt[4]{y^3}$

12) $2ab^6\sqrt[5]{a^4}$

13) $\sqrt[12]{a^5}$

14) $\sqrt[12]{x^2y^5}$

15) $\frac{\sqrt{35}}{7}$

16) $\frac{2\sqrt{15}}{5}$

17) $\frac{2\sqrt[3]{6}}{3}$

18) $\frac{\sqrt[3]{75ac^2}}{5c}$

19) $\frac{y\sqrt[3]{180x^2y}}{6x^2}$

20) $\frac{\sqrt[3]{2xy^2}}{xy}$