Unit VII – Relations of Rational Number Degree
Part B – Operations with Radical Expressions
Lesson 3 – Division and Simplifying

Simplify each of the following, being sure no fractions are left under the radical and no radicals are left in the denominator of a fraction.

1. $\dfrac{5\sqrt{180}}{3}$

2. $\sqrt[4]{\dfrac{25}{9}}$

3. $\sqrt[5]{\dfrac{128}{6}}$

4. $\sqrt[3]{\dfrac{320}{9}}$

5. $\sqrt{\dfrac{12}{x^3}}$

6. $\sqrt{\dfrac{a^4}{b^3}}$

7. $\sqrt[6]{\dfrac{81p^4}{q^8}}$

8. $\sqrt[3]{\dfrac{14}{7x^2y}}$

9. $\sqrt[4]{\dfrac{128x^7}{243y^9}}$

10. $\sqrt{\dfrac{3x^2}{16}}$

11. $\sqrt[6]{\dfrac{8}{27}}$

12. $\sqrt[3]{\dfrac{16x^6y^4}{z^2}}$

13. $\dfrac{\sqrt{48x^3y^4}}{\sqrt{3xy}}$

14. $\dfrac{\sqrt[5]{64c^{11}}}{\sqrt[5]{2c^4}}$

15. $\dfrac{\sqrt{2}}{\sqrt{5x^2}}$

16. $\sqrt{\dfrac{56x^4y^5}{7xy}}$

17. $\sqrt{\dfrac{27a^3}{20m^5n^2}}$

18. $\dfrac{\sqrt[4]{2^3}}{\sqrt[5]{3^4}}$

19. $\sqrt[5]{\dfrac{3}{16a^4b^2}}$

20. $\dfrac{\sqrt[4]{x^3}}{\sqrt[6]{x^7}} \cdot \dfrac{\sqrt{8}}{\sqrt[3]{4}}$

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Simplify each of the following, being sure no fractions are left under the radical and no radicals are left in the denominator of a fraction.

1. $10\sqrt{5}$

2. $\dfrac{\sqrt[4]{225}}{3}$

3. $\dfrac{\sqrt[5]{4}}{3}$

4. $\dfrac{4\sqrt[3]{5}}{9}$

5. $\dfrac{2\sqrt{3x}}{x^2}$

6. $\dfrac{a^2\sqrt{b}}{b^2}$

7. $\dfrac{\sqrt[3]{9p^2q^2}}{q^2}$

8. $\dfrac{\sqrt[3]{2xy^2}}{xy}$

9. $\dfrac{2x\sqrt[4]{216x^3y^3}}{9y^3}$

10. $\dfrac{x\sqrt{3}}{4}$

11. $\dfrac{\sqrt{6}}{3}$

12. $\dfrac{2x^2\sqrt[3]{2y^2z}}{z}$

13. $4xy\sqrt{y}$

14. $2c\sqrt[5]{c^2}$

15. $\dfrac{\sqrt{10}}{5x}$

16. $2xy\sqrt[2]{2x}$

17. $\dfrac{3a\sqrt{15am}}{10m^3n}$

18. $\dfrac{\sqrt[20]{2,654,208}}{3}$

19. $\dfrac{\sqrt[5]{6ab^3}}{2ab}$

20. $\dfrac{\sqrt[12]{1024x^7}}{x}$