

# EXTRA PRACTICE — Exercises

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## Unit VII – Relations of Rational Number Degree Part B – Operations with Radical Expressions Lesson 2 – Simplifying with Perfect Powers

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Simplify the following, finding all perfect powers as indicated by the index and making sure the order of the radical is reduced.

1.  $(-2\sqrt[3]{3y})^3$

2.  $\sqrt[5]{128}$

3.  $(\sqrt[4]{7x})^4$

4.  $(4\sqrt[3]{2x-1})^3$

5.  $\sqrt[3]{-54}$

6.  $\sqrt[3]{27x^9}$

7.  $\sqrt[4]{16a^{23}}$

8.  $\sqrt[6]{25n^4}$

9.  $\sqrt[7]{x^{14}y^{35}}$

10.  $(\sqrt[4]{x+2})^4$

11.  $\sqrt{64x^{36}y^{96}}$

12.  $\sqrt[3]{(x^2 - 8x + 16)^9}$

13.  $\sqrt{.25x^6}$

14.  $\sqrt[3]{48}$

15.  $\sqrt[4]{81a^8b^5c^3}$

16.  $\sqrt{90x^3y^4}$

17.  $\sqrt{25p^{4c-2}}$

18.  $\sqrt{54x^4y^5z^7}$

19.  $3\sqrt[3]{56a^6b^3}$

20.  $\sqrt[6]{64q^{12a+54}}$

# EXTRA PRACTICE — Answer Key

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Simplify the following, finding all perfect powers as indicated by the index and making sure the order of the radical is reduced.

1.  $-24y$

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

3.  $7x$

4.  $128x - 64$

5.  $-3\sqrt[3]{2}$

6.  $3x^3$

7.  $2a^5\sqrt[4]{a^3}$

8.  $\sqrt[3]{5n^2}$

9.  $x^2y^5$

10.  $x + 2$

11.  $8x^{18}y^{48}$

12.  $(x - 4)^6$

13.  $.5x^3$

14.  $2\sqrt[3]{6}$

15.  $3a^2b\sqrt[4]{bc^3}$

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

17.  $5p^{2c-1}$

18.  $3x^2y^2z^3\sqrt{6yz}$

19.  $6a^2b\sqrt[3]{7}$

20.  $2q^{2a+9}$