# EXTRA PRACTICE — Exercises



## Unit VII – Relations of Rational Number Degree
## Part A – Rational Numbers as Exponents
## Lesson 1 – Fractions as Exponents

For each of the following, find the identical factors indicated, the related radical expression, and the related exponent notation showing the radicand to a fractional power.

1. $g^7$ 5 factors

2. $b^4$ 4 factors

3. $t$ 3 factors

4. $x^4y^3$ 5 factors

5. $a^9$ 4 factors

6. $x^4$ 3 factors

7. $m^2$ 5 factors

8. $(m^2)^3$ 3 factors

9. $n^2m^5$ 5 factors

10. $(ab)^4$ 3 factors

# EXTRA PRACTICE — Answer Key



## Unit VII – Relations of Rational Number Degree
## Part A – Rational Numbers as Exponents
## Lesson 1 – Fractions as Exponents

For each of the following, find the identical factors indicated, the related radical expression, and the related exponent notation showing the radicand to a fractional power.

| | Identical Factors | Radical Expression | Exponent Notation |
|---|---|---|---|
| 1. | $q^{\frac{7}{5}} \cdot q^{\frac{7}{5}} \cdot q^{\frac{7}{5}} \cdot q^{\frac{7}{5}} \cdot q^{\frac{7}{5}}$ | $\sqrt[5]{q^7}$ | $q^{\frac{7}{5}}$ |
| 2. | $b^{\frac{11}{4}} \cdot b^{\frac{11}{4}} \cdot b^{\frac{11}{4}} \cdot b^{\frac{11}{4}}$ | $\sqrt[4]{b^{11}}$ | $b^{\frac{11}{4}}$ |
| 3. | $t^{\frac{1}{3}} \cdot t^{\frac{1}{3}} \cdot t^{\frac{1}{3}}$ | $\sqrt[3]{t}$ | $t^{\frac{1}{3}}$ |
| 4. | $x^{\frac{4}{5}}y^{\frac{3}{5}} \cdot x^{\frac{4}{5}}y^{\frac{3}{5}} \cdot x^{\frac{4}{5}}y^{\frac{3}{5}} \cdot x^{\frac{4}{5}}y^{\frac{3}{5}} \cdot x^{\frac{4}{5}}y^{\frac{3}{5}}$ | $\sqrt[5]{x^4y^3}$ | $x^{\frac{4}{5}}y^{\frac{3}{5}}$ |
| 5. | $a^{\frac{9}{4}} \cdot a^{\frac{9}{4}} \cdot a^{\frac{9}{4}} \cdot a^{\frac{9}{4}}$ | $\sqrt[4]{a^9}$ | $a^{\frac{9}{4}}$ |
| 6. | $x^{\frac{4}{3}} \cdot x^{\frac{4}{3}} \cdot x^{\frac{4}{3}}$ | $\sqrt[3]{x^4}$ | $x^{\frac{4}{3}}$ |
| 7. | $m^{\frac{2}{5}} \cdot m^{\frac{2}{5}} \cdot m^{\frac{2}{5}} \cdot m^{\frac{2}{5}} \cdot m^{\frac{2}{5}}$ | $\sqrt[5]{m^2}$ | $m^{\frac{2}{5}}$ |
| 8. | $m^2 \cdot m^2 \cdot m^2$ | $\sqrt[3]{\left(m^2\right)^3}$ | $\left(m^2\right)^{\frac{3}{3}}$ |
| 9. | $n^{\frac{2}{5}}m^{\frac{5}{5}} \cdot n^{\frac{2}{5}}m^{\frac{5}{5}} \cdot n^{\frac{2}{5}}m^{\frac{5}{5}} \cdot n^{\frac{2}{5}}m^{\frac{5}{5}} \cdot n^{\frac{2}{5}}m^{\frac{5}{5}}$ | $\sqrt[5]{n^2m^5}$ | $\left(n^2m^5\right)^{\frac{1}{5}}$ |
| 10. | $(ab)^{\frac{4}{3}} \cdot (ab)^{\frac{4}{3}} \cdot (ab)^{\frac{4}{3}} \cdot (ab)^{\frac{4}{3}}$ | $\sqrt[3]{(ab)^4}$ | $(ab)^{\frac{4}{3}}$ |