

Section 1.4 – Fractional Exponents

Problem Set 2

Rewrite the following expressions using the radical symbol, $\sqrt{\quad}$, instead of the fractional exponent.

1. $6^{\frac{1}{6}}$

2. $14^{\frac{7}{12}}$

3. $a^{\frac{6}{17}}$

4. $(-6)^{\frac{8}{3}}$

Rewrite the following expressions using exponents.

5. $\sqrt[3]{8}$

6. $\sqrt[17]{(3be)^{12}}$

7. $\sqrt{991}$

8. $\sqrt[4]{3^9}$

Simplify the following expressions.

9. $\frac{u^{\frac{5}{8}}}{u^{\frac{3}{7}}}$

10. $q^{\frac{4}{3}} \cdot q^{\frac{1}{6}}$

11. $\frac{w^{\frac{12}{7}}}{w^2}$

12. $(m^3n^2)^{\frac{2}{3}}$

13. $\sqrt[12]{x^8y^9} \cdot \sqrt[3]{x^8y^7}$

14. $\frac{\sqrt[4]{pq^6}}{\sqrt[6]{p}}$

15. $\frac{\left(r^2s^{\frac{9}{8}}\right)^2}{rs^{\frac{3}{8}}}$

16. $\frac{12k^{32}j^{\frac{7}{13}}}{3k^{16}j^{\frac{9}{13}}}$

17. $p^{\frac{1}{3}} \cdot p^{\frac{1}{6}} + q^{\frac{7}{12}} \cdot q^{-\frac{5}{6}}$

18. $\sqrt[4]{t^7}$

19. $\frac{t^{12}}{t^{\frac{3}{8}}}$

20. $\sqrt[8]{t^3q^4} \cdot \sqrt{t^2q^3}$