

Simplifying Expressions Using the Laws of Exponents - Key

In problems 1-11, simplify each of the following expressions

| | |
|---------------------------------------|-----------------------------------|
| 1. 16 | 2. 4 |
| 3. $\frac{1}{3^{\frac{3}{10}}}$ | 4. $\frac{1}{x^{\frac{11}{21}}}$ |
| 5. x^2 | 6. $\frac{64}{5}$ |
| 7. $x^{\frac{8}{5}}y^{\frac{3}{5}}$ | 8. $\frac{y^2}{x^{\frac{1}{10}}}$ |
| 9. $16x^6y^4$ | 10. $\frac{8}{x^{\frac{3}{8}}y}$ |
| 11. $2x^{\frac{1}{4}}y^{\frac{3}{4}}$ | |

In problems 12-19, use rational exponents to simplify each radical. Assume all variables are positive.

| | |
|------------------------|----------------------------------|
| 12. x^6 | 13. 4 |
| 14. $2xy^4$ | 15. $x^{\frac{2}{15}}$ |
| 16. $x^{\frac{7}{12}}$ | 17. $x^{\frac{5}{6}}$ |
| 18. $5^{\frac{7}{6}}$ | 19. $\frac{1}{2^{\frac{1}{12}}}$ |

In problems 20-21, simplify by factoring

| | |
|-----------------------------|--------------------------------|
| 20. $x^{\frac{1}{2}}(6x-7)$ | 21. $(x+2)^{\frac{3}{2}}(x+3)$ |
|-----------------------------|--------------------------------|