Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Period\_\_\_\_\_

**15.2 – Simplifying Rational Exponents**

Rewrite each expression using rational (fractional) exponents.

|  |  |
| --- | --- |
| 1. $\left(\sqrt[3]{7}\right)^{5}$ | 2. $\left(\sqrt[4]{3}\right)^{3}$ |
| 3. $\left(\sqrt[3]{4}\right)^{4}$  | 4. $\left(\sqrt[4]{3}\right)^{5}$ |
| 5. $\left(\sqrt[3]{6}\right)^{4}$  | 6. $\left(\sqrt[6]{2}\right)^{5}$ |

Rewrite each expression using radical notation.

|  |  |
| --- | --- |
| 7. $10^{\frac{3}{2}}$  | 8. $7^{\frac{5}{3}}$ |
| 9. $10^{\frac{5}{4}}$ | 10. $2^{\frac{5}{6}}$ |

|  |  |
| --- | --- |
| 11. $10^{\frac{8}{5}}$  | 12. $7^{\frac{5}{2}}$ |

Evaluate each expression by rewriting in radical notation.

|  |  |
| --- | --- |
| 13. $36^{\frac{1}{2}}$ | 14. $49^{\frac{3}{2}}$ |
| 15. $64^{\frac{5}{6}}$ | 16. $49^{\frac{3}{2}}$ |
| 17. $36^{\frac{3}{2}}$  | 18. $64^{\frac{2}{3}}$ |