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

**15.1b – Simplifying Radicals with Variables**

Simplify.

|  |  |
| --- | --- |
| 1. $\sqrt{8x^{2}}$ | 2. $\sqrt{28x^{5}y^{4}}$ |
| 3. $\sqrt[3]{54x^{6}}$ | 4. $\sqrt[3]{729x^{5}y^{7}}$ |
| 5. $\sqrt[3]{189x^{2}}$  | 6. $\sqrt[4]{80x^{4}y^{4}}$ |
| 7. $\sqrt[4]{1296x^{12}}$  | 8. $\sqrt[4]{243x^{7}y^{13}}$ |
| 9. $\sqrt[5]{1215x^{8}}$ | 10. $\sqrt[5]{16807x^{12}y^{5}}$ |

|  |  |
| --- | --- |
| 11. $\sqrt[6]{729x^{18}}$  | 12. $\sqrt[6]{192x^{2}y^{7}}$ |
| 13. $\sqrt[7]{256x^{5}}$ | 14. $\sqrt[7]{78125x^{9}y^{14}}$ |
| 15. $\sqrt[8]{13122x^{10}}$ | 16. $\sqrt[8]{65536y^{24}y^{12}}$ |
| 17. $\sqrt[9]{2048x^{15}}$  | 18. $\sqrt[9]{19683x^{20}y^{18}}$ |
| 19. $\sqrt[10]{59049x^{30}}$ | 20. $\sqrt[10]{5120x^{14}y^{15}}$ |