

Radicals

Name _____ Section/Period _____

Assigned: _____

Completely simplify each of the following. Assume all variables do not equal zero.

1. $\sqrt{4a^3}$

2. $\sqrt{32x^5y^3}$

3. $\sqrt[3]{81a^4b^3c^5}$

Radicals

4. $\sqrt[4]{729x^3y^5w^{21}}$

5. $\sqrt{\frac{6x^4}{3}}$

6. $\sqrt[3]{\frac{16x^4y^{-2}w^6}{25x^{-1}y^5}}$

Radicals

For each of the following, simplify if possible. Make sure the index is reduced to lowest terms.

7. $\sqrt[6]{27}$

8. $\sqrt[3]{729}$

9. $\sqrt[4]{15,625}$

Radicals

10. $\sqrt{\sqrt{16}}$

11. $\sqrt[4]{\sqrt{2}}$

12. $\sqrt[3]{\frac{\sqrt{20}}{3}}$

Radicals

Perform each of the following operations. Leave all answers in simplest form.

13. $\sqrt{8} + \sqrt{32}$

14. $\sqrt{288} - (\sqrt{512} - \sqrt{7,200})$

15. $\sqrt{2}\sqrt{4}$

Radicals

16. $(\sqrt[3]{\sqrt[4]{27}})(\sqrt[6]{\sqrt[2]{81}})$

17. $\sqrt{12} + \sqrt{27} - \sqrt[4]{144}$

18. $\sqrt[3]{(\sqrt{125})(\sqrt{3,125})}$

Radicals

Solve each of the following for x.

19. $\sqrt{8} = \sqrt[3]{64}$

20. $\sqrt{32} = \sqrt[3]{64^x}$