

Name _____

Alg II/Period _____

Date _____

Fractional Exponents A

I. Simplify the following radicals.

1. $\sqrt[3]{500}$

2. $\sqrt[4]{64}$

3. $\sqrt[3]{81}$

4. $\sqrt[6]{256}$

II. Express in radical form.

5. $a^{\frac{1}{2}}$

6. $(x^2y)^{\frac{1}{3}}$

7. $8^{\frac{1}{3}}$

8. $(ab^5)^{\frac{1}{4}}$

9. $(x^3y)^{\frac{2}{3}}$

10. $(2z^4)^{\frac{2}{3}}$

11. $(a^3)^{\frac{3}{5}}$

12. $64^{\frac{1}{4}}$

13. $(a^2b^3)^{\frac{2}{5}}$

14. $(8a^4)^{\frac{2}{3}}$

15. $(21b^4)^{\frac{1}{2}}$

16. $4(xy^3)^{\frac{5}{6}}$

III. Express in rational (fractional) form.

17. $\sqrt[4]{a}$

18. $\sqrt[5]{3a^2}$

19. $\sqrt[3]{5ab}$

20. $\sqrt[4]{a^3x^2}$

21. $\sqrt[7]{128r^7}$

22. $\sqrt[3]{w^3t^4}$

23. $\sqrt{15}$

24. $\sqrt[3]{x^5y^2z}$

Name _____

Alg II/Period _____

Date _____

Fractional Exponents B

I. Express in simplest form.

1. $\sqrt[4]{48}$

2. $\sqrt[3]{81}$

3. $\sqrt[5]{64}$

4. $2\sqrt[3]{16x^8y^5}$

II. Express using rational (fractional) exponents.

5. $\sqrt{21}$

6. $\sqrt[3]{30}$

7. $\sqrt[6]{32}$

8. $\sqrt[4]{x}$

9. $\sqrt[3]{y}$

10. $\sqrt{25x^3y^4}$

11. $\sqrt[3]{8m^3r^6}$

12. $\sqrt[4]{8c^3d^5}$

13. $\sqrt[4]{27s}$

14. $\sqrt[3]{16a^5b^7}$

15. $\sqrt[3]{n^2}$

16. $\sqrt[6]{b^3}$

III. Express in simplest radical form.

17. $36^{\frac{1}{4}}$

18. $5^{\frac{1}{2}}$

19. $x^{\frac{3}{4}}$

20. $(4x^2y^4)^{\frac{1}{3}}$

21. $9^{\frac{2}{3}}$

22. $(3m)^{\frac{2}{5}}n^{\frac{3}{5}}$

23. $16^{\frac{3}{4}}$

24. $w^{\frac{4}{7}}y^{\frac{3}{7}}$

25. $64^{\frac{5}{6}}$

26. $\left(4^{\frac{2}{3}}\right)^3$

27. $(2x)^{\frac{1}{2}}x^{\frac{1}{2}}$

28. $64^{\frac{1}{3}}$