

Secondary Math III
Extracting Roots and Rewriting Radicals

Assignment 8.4

Carnegie Pages 675 #3a, 3c, 3f

Name: _____

Period _____

Simplify. Do not leave answers with zero or negative exponents. Assume all variables are positive.

1. $(-5z)^3$

2. $5x^4(x^2)$

3. $(-x)^3(3x^4)$

4. $\frac{2r^4}{6r^8}$

5. $(2x^5)^0$

6. $(4y^{-2})(8y^4)$

Write using radical notation and simplify.

7. $(-8)^{2/3}$

8. $16^{3/4}$

9. $9^{3/2}$

Write in rational exponent form:

10. $\sqrt[3]{x^2}$

11. $\sqrt{5^3}$

12. $\sqrt[4]{y^3}$

Use properties of exponents to simplify. Do not leave answers with negative exponents.

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

14. $(x^6y^{-9})^{-2/3}$

15. $\frac{2x^{1/2}}{2^{1/3}}$

Simplify radicals:

16. $\sqrt{144n^4}$

17. $\sqrt{18n}$

18. $\sqrt[4]{32x^4}$

19. $\sqrt{5} \cdot \sqrt{12}$

20. $\sqrt{15} \cdot \sqrt{5}$

21. $\frac{\sqrt{300}}{\sqrt{3}}$

22. $\sqrt[6]{7^4}$

23. $\sqrt[3]{2} \cdot \sqrt[5]{2}$

24. $\sqrt[4]{x} \cdot \sqrt{x}$

Simplify. Do not leave answers with zero or negative exponents. Assume all variables are positive.

25. $3^n \cdot 3^{2n}$

26. $-\sqrt{81}$

27. $\sqrt{\frac{81}{36}}$

28. $\frac{4}{\sqrt{64}}$

29. $\sqrt{18x^3}$

30. $\sqrt{\frac{32a^4}{b^2}}$

31. $\sqrt[3]{16x^8}$

32. $\sqrt{16+x^8}$

33. $\sqrt{36x^2y^{-4}}$

34. $\sqrt{16y^9z^8}$

35. $\sqrt{50x^5}$

36. $\sqrt[3]{-8x^{-6}}$

Review:

Show that $f(x)$ and $g(x)$ are inverses by finding and simplifying $(f \circ g)(x)$ and $(g \circ f)(x)$. Show all steps.

37. $f(x) = (x-2)^3 + 5$; $g(x) = \sqrt[3]{x-5} + 2$

ACT Practice:

38. $5x^3 \times 2xy \times 3xy^2$ is equivalent to:

F. $10x^3y^2$

G. $10x^5y^3$

H. $30x^3y^3$

J. $30x^5y^3$

K. $30x^5y^2$

39. When written in symbols, "the product of r and s , raised to the fourth power," is represented as:

F. r^4s^4

G. $(r+s)^4$

H. $(rs)^4$

J. $\frac{r^4}{s^4}$

K. rs^4