

5.2 Properties of Rational Exponents & Radicals DAY ONE CYU

Use when you get it right all by yourself

S Use when you did it all by yourself, but made a silly mistake

H Use when you could do it alone with a little help from teacher or peer

G Use when you completed the problem in a group

X Use when a question was attempted but wrong (get help)

N Use when a question was not even attempted

CONCEPTS	BASIC	INTERMEDIATE	ADVANCED
Simplify rational exponents using properties		8 - 27	34 - 39
Simplify radical expressions using properties			48
Law of exponents	1 - 9	28 - 33	40 - 48
Simplifying negative exponents	4 - 9	14 - 17, 20, 21, 24, 25	28 - 39

Simplify the expression, leaving no negative exponents or radicals in the denominator.

Show all work or thought process for full credit.

1. $(-3x^2)^2$

2. $\frac{-12xy}{7x^4} \cdot \frac{21x^5y^2}{4y}$

3. $3y^2 \cdot y^2$

4. $-2x^2y^0$

5. $(25x^5y^{-7})^{36} (25x^5y^7)^{-36}$

6. $(2xy^3)^{-2}$

7. $xy^{-2}x$

8. $(3x^2y^{-2})^{-2} (3x^4y^6)^2$

9. $\frac{2x^2y^7}{6xy^{-1}}$

8. $64^{\frac{2}{3}}$

11. $64^{\frac{3}{2}}$

12. $64^{\frac{5}{6}}$

13. $64^{\frac{7}{6}}$

14. $64^{-\frac{3}{2}}$

15. $64^{-\frac{2}{3}}$

16. $(-64)^{\frac{-2}{3}}$

17. $(-64)^{\frac{-3}{2}}$

18. $-64^{\frac{2}{3}}$

19. $-64^{\frac{3}{2}}$

20. $32^{\frac{-6}{5}}$

21. $-32^{\frac{-6}{5}}$

22. $128^{\frac{2}{7}}$

23. $256^{\frac{3}{4}}$

24. $81^{-\frac{3}{2}}$

25. $243^{-\frac{4}{5}}$

26. $343^{\frac{2}{3}}$

27. $36^{\frac{3}{2}}$

28. $6x^5 \cdot 3x^{-2}$

29. $7x^{-3} \cdot 8x^9$

30. $5x^{-4} \cdot 2x^{-3}$

31. $9x^{-2} \cdot 6x^{-5}$

32. $3a^{-11} \cdot 17a^5$

33. $11p^7 \cdot 4p^{-12}$

34. $3x^{\frac{1}{2}} \cdot 4x^{\frac{2}{3}}$

35. $5x^{\frac{1}{2}} \cdot 6x^{\frac{1}{8}}$

36. $x^{\frac{2}{3}} \cdot 4x^{\frac{3}{2}}$

37. $3x^{\frac{2}{5}} \cdot 4x^{\frac{2}{3}}$

38. $3x^{\frac{1}{2}}y \cdot 4x^{\frac{2}{3}}y^{\frac{1}{2}}$

39. $x^{\frac{7}{5}} \cdot x^{\frac{5}{8}}$

40. $(-2x^2)^3 (3x^{-1}y^2)^4$

41. $(4x^3)^{\frac{1}{2}} (-2x^{-3}y^{-1})^3$

42. $(3x^2y^{-3})^4 (2x^{\frac{1}{2}}y^3)^4$

43. $\left(5a^{\frac{2}{3}}b^{\frac{4}{3}}\right)^3$

44. $\frac{x^{-1}y^{-4}z}{x^{-2}yz^{-3}}$

45. $\frac{13x^{\frac{1}{5}}y^{-2}z^0}{39xy^{\frac{1}{2}}z^2}$

46. $\frac{3^4a^{-7}b^3d^{-4}}{43^0a^{-4}b^{-5}c^6}$

47. $(490x^{17}y^{23})^0$

48. $\sqrt[4]{16x^{12}y^8}$

CYU Reflection: How far can you go: basic, intermediate, or advanced?

Rate your mastery level!

How confident are you with the skills this CYU covered? Circle the score you would give yourself.

