

Quiz for Lessons 7-1 Through 7-5

7-1 Integer Exponents

Evaluate each expression for the given value(s) of the variable(s).

1. t^{-6} for $t = 2$ $\frac{1}{64}$

2. n^{-3} for $n = -5$ $-\frac{1}{125}$

3. $r^0 s^{-2}$ for $r = 8$ and $s = 10$ $\frac{1}{100}$

Simplify.

4. $5k^{-3}$ $\frac{5}{k^3}$

5. $\frac{x^4}{y^{-6}}$ $x^4 y^6$

6. $8f^{-4} g^0$ $\frac{8}{f^4}$

7. $\frac{a^{-3}}{b^{-2}}$ $\frac{b^2}{a^3}$

8. **Measurement** Metric units can be written in terms of a base unit. The table shows some of these equivalencies. Simplify each expression.

Selected Metric Prefixes					
Milli-	Centi-	Deci-	Deka-	Hecto-	Kilo-
10^{-3}	10^{-2}	10^{-1}	10^1	10^2	10^3

7-2 Powers of 10 and Scientific Notation

9. Find the value of 10^4 . **10,000**

11. Write 100,000,000,000 as a power of 10. **10^{11}**

13. **Measurement** The lead in a mechanical pencil has a diameter of 0.5 mm. Write this number in scientific notation. **5×10^{-1}**

10. Write 0.0000001 as a power of 10. **10^{-7}**

12. Find the value of 82.1×10^4 . **821,000**

7-3 Multiplication Properties of Exponents

Simplify.

14. $2^2 \cdot 2^5$ **2^7**

15. $3^5 \cdot 3^{-3}$ **3^2 , or 9**

16. $p^4 \cdot p^5$ **p^9**

17. $a^3 \cdot a^{-6} \cdot a^{-2}$ **$\frac{1}{a^5}$**

18. **Biology** A swarm of locusts was estimated to contain 2.8×10^{10} individual insects. If each locust weighs about 2.5 grams, how much did this entire swarm weigh? Write your answer in scientific notation. **7×10^{10} g**

Simplify.

19. $(3x^4)^3$ **$27x^{12}$**

20. $(m^3 n^2)^5$ **$m^{15} n^{10}$**

21. $(-4d^7)^2$ **$16d^{14}$**

22. $(cd^6)^3 \cdot (c^5 d^2)^2$ **$c^{13} d^{22}$**

7-4 Division Properties of Exponents

Simplify.

23. $\frac{6^9}{6^7}$ **36**

24. $\frac{12a^5}{3a^2}$ **$4a^3$**

25. $(\frac{3}{5})^3$ **$\frac{27}{125}$**

26. $(\frac{4p^3}{2pq^4})^2$ **$\frac{4p^4}{q^8}$**

Simplify each quotient and write the answer in scientific notation.

27. $(8 \times 10^9) \div (2 \times 10^6)$ **4×10^3**

28. $(3.5 \times 10^5) \div (7 \times 10^8)$ **5×10^{-4}**

29. $(1 \times 10^4) \div (4 \times 10^4)$ **2.5×10^{-1}**

7-5 Fractional Exponents

Simplify each expression. All variables represent nonnegative numbers.

30. $81^{\frac{1}{2}}$ **9**

31. $125^{\frac{1}{3}}$ **5**

32. $4^{\frac{3}{2}}$ **8**

33. $0^{\frac{2}{9}}$ **0**

34. $\sqrt{x^8 y^4}$ **$x^4 y^2$**

35. $\sqrt[3]{r^9}$ **r^3**

36. $\sqrt[6]{z^{12}}$ **z^2**

37. $\sqrt[3]{p^3 q^{12}}$ **pq^4**

Ready to Go On? 429

Organizer

Objective: Assess students' mastery of concepts and skills Lessons 7-1 through 7-5.



Countdown to Mastery Week 10

Resources



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Answer

$8. 10^{-3} = \frac{1}{1000}, \text{ or } 0.001;$

$10^{-2} = \frac{1}{100}, \text{ or } 0.01;$

$10^{-1} = \frac{1}{10}, \text{ or } 0.1;$

$10^1 = 10; 10^2 = 100;$

$10^3 = 1000$

READY TO GO ON?

Diagnose and Prescribe

NO INTERVENE

Ready to Go On? Intervention		READY TO GO ON? Intervention, Section 7A	
Lesson 7-1	2.0	Worksheets	CD-ROM
Lesson 7-2	2.0	7-1 Intervention	Activity 7-1
		7-2 Intervention	Activity 7-2
			Activity 7-3
			Online
			Diagnose and Prescribe Online

YES ENRICH

READY TO GO ON? Enrichment, Section 7A

Worksheets
CD-ROM
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