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Chapter 10 Test Study Guide

1. Evaluate -3^2

$$\underline{-3 \cdot 3 = -9}$$

2. Evaluate 4^3

$$\underline{4 \cdot 4 \cdot 4 = 64}$$

3. Evaluate $(-2)^4$

$$\underline{(-2)(-2)(-2)(-2) = 16}$$

4. Explain why $-8^2 \neq (-8)^2$

$$\underline{-8^2 \text{ means } -8 \cdot 8 = -64}$$

$$\underline{(-8)^2 \text{ means } (-8)(-8) = 64}$$

5. Simplify $x^5 \cdot x^2$

$$\underline{x^{5+2} = x^7}$$

7. Simplify $(a^2)^3$

$$\underline{a^{2(3)} = a^6}$$

6. Simplify $3y^4 \cdot 2y^4$

$$\underline{6y^{4+4} = 6y^8}$$

8. Simplify $(2x^5)^3$

$$\underline{(2x^5)(2x^5)(2x^5) = 8x^{15}}$$

9. Simplify $\frac{x^{12}}{x^3}$

$$\underline{x^{12-3} = x^9}$$

11. Simplify $\frac{10y^8}{2y}$

$$\underline{5y^{8-1} = 5y^7}$$

10. Simplify $\frac{p^9}{p^3}$

$$\underline{p^{9-3} = p^6}$$

12. Simplify $q \cdot q^3$

$$\underline{q^{1+3} = q^4}$$



13. Evaluate -6^0

$-(6^0) = -1$

14. Evaluate $9^{-3} \cdot 9^3$

$9^{-3+3} = 9^0 = 1$

15. Rewrite using positive exponents $2f^{-2}$

$\frac{2}{f^2}$

16. Rewrite using positive exponents $\frac{1}{a^{-6}}$

a^6

17. Rewrite using positive exponents $4x^{-2}y^2$

$\frac{4y^2}{x^2}$

19. Write in standard form 4×10^5

$400,000$ *400,000*

18. Evaluate 4^{-2}

$\frac{1}{4^2} = \frac{1}{16}$

20. Write in standard form 2×10^{-4}

0.0002 *0.0002*

21. Write 21,000,000 in scientific notation

2.1×10^7

23. Explain why 0.3×10^{-4} is not written in proper scientific notation

The first # (the factor needs to be between 1 and 10, but $0.3 < 1$)

22. Write 0.00002 in scientific notation

2×10^{-5}

24. Write $c \cdot c \cdot c \cdot d \cdot d \cdot d$ using exponents

$c^3 d^3$



25. Simplify $(7g)^2$

$$49g^2$$

26. Simplify $\frac{k^5 \cdot k^7}{k^8 \cdot k^2}$

$$\frac{k^{12}}{k^{10}} = k^2$$

27. Rewrite using positive exponents $x^2y^{-3}z^4$

$$\frac{x^2z^4}{y^3}$$

28. Simplify $\frac{r^5}{r^9}$, express your answer using positive exponents

$$\frac{1}{r^4}$$

29. Evaluate $\left(\frac{1}{5}\right)^2$

$$\frac{1}{25}$$

30. Evaluate $6^{-5} \cdot 6^7$

$$6^{-5+7} = 6^2 = 36$$

31. Simplify $(t^2)^4$

$$t^{2(4)} = t^8$$

32. Simplify $\frac{w^4 \cdot w^9}{w^5 \cdot w^8}$

$$\frac{w^{13}}{w^{13}} = 1$$

33. Evaluate $(-2)^3$

$$-8$$

35. Simplify $(n^5)^3 - (n^3)^5$

$$n^{15} - n^{15} = 0$$

34. Evaluate $2^{-3} \cdot 2^5$

$$2^{-3+5} = 2^2 = 4$$

36. Rewrite using positive exponents $2a^{-1}b^2c^{-3}$

$$\frac{2b^2}{ac^3}$$