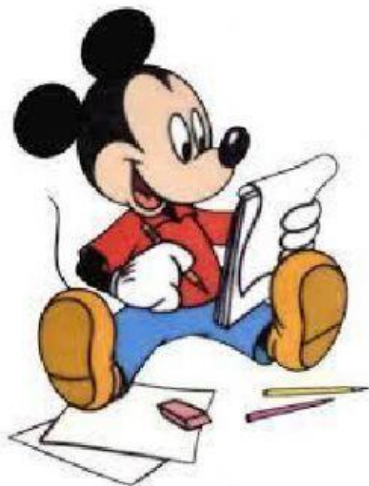




Name: _____

Class: _____

No. _____



Laws of Exponents:
Law 2 (Quotient Law)

$$x^a \div x^b = x^{a-b}$$

Examples: (1) $7^9 \div 7^5 = 7^{9-5} = 7^4$

(2) $2^6 \div 2^8 = 2^{6-8} = 2^{-2}$

(3) $5^7 \div 5^{-8} = 5^{7-(-8)} = 5^{7+8} = 5^{15}$

(3) $6^{-4} \div 6^{-5} = 6^{-4-(-5)} = 6^{-4+5} = 6^1 = 6$

Find the quotient.

1. $4^6 \div 4^9 =$ _____

a. 4^{-3}

b. 4^{15}

c. 4^3

d. 4^{-15}

2. $9^{14} \div 9^7 =$ _____

a. 9^2

b. 9^7

c. 9^{-7}

d. 9^{21}

3. $6^{18} \div 6^3 \div 6^2 =$ _____

a. 6^3

b. 6^{-3}

c. 6^{14}

d. 6^{13}

4. $12^{-16} \div 12^{32} =$ _____

a. 12^{48}

b. 12^{-16}

c. 12^{-48}

d. 12^{16}

5. $10^{-11} \div 10^{-16} =$ _____

a. 10^{-5}

b. 10^5

c. 10^{-27}

d. 10^{-27}

6. $8^{12} \div 8^{-12} =$ _____

a. 8^{24}

b. 8^0

c. 8^{-24}

d. 8^{-1}

7. $3^{-23} \div 3^{-34} =$ _____

a. 3^{11}

b. 3^{57}

c. 3^{-11}

d. 3^{-57}

8. $2^{-8} \div 2^2 \div 2^{-7} =$ _____

a. 2^{-13}

b. 2^{-17}

c. 2^3

d. 2^{-3}

9. $5^{-9} \div 5^{-12} \div 5^{13} =$ _____

a. 5^{-10}

b. 5^{-8}

c. 5^{-4}

d. 5^{10}

10. $15^{10} \div 15^{-36} \div 15^{18} =$ _____

a. 15^{-44}

b. 15^{28}

c. 15^{-28}

d. 15^{-8}