



Assumption College Ubonratchathani
English for Math 2

Name: _____ Class: _____ No. _____



Laws of Exponents:
Law 3 (Power Law)

$$([x]^a)^b = x^{a \times b}$$

Examples: Simplify (1) $[(7^9)]^3 = 7^{9 \times 3} = 7^{27}$

(2) $[(3^4)]^{-2} = 3^{4 \times (-2)} = 3^{-8}$

(3) $[(6^7)]^0 = 6^{7 \times 0} = 7^0 = 1$

(4) $\left(\left[\frac{2}{3}\right]^4\right)^5 = \left[\frac{2}{3}\right]^{4 \times 5} = \left[\frac{2}{3}\right]^{20}$

Simplify the following.

1. $(8^6)^5 =$ _____

a. 8^{11}

b. 8^{12}

c. 8^{15}

d. 8^{30}

2. $(9^{14})^{-2} =$ _____

a. 9^{12}

b. 9^{-7}

c. 9^{-28}

d. 9^7

3. $(6^{-9})^3 =$ _____

a. 6^{-27}

b. 6^{-6}

c. 6^{-3}

d. 6^{27}

4. $(12^{-16})^0 = \underline{\hspace{2cm}}$

a. 0

b. 1

c. 12^{-16}

d. 12^{16}

5. $((10)^{-6})^{-2} = \underline{\hspace{2cm}}$

a. 10^{-8}

b. 10^{-12}

c. 10^{12}

d. 10^8

6. $((8^4)^2)^3 = \underline{\hspace{2cm}}$

a. 8^{24}

b. 8^9

c. 8^{-9}

d. 8^{18}

7. $\left(\left[\frac{3}{4}\right]^2\right)^6 = \underline{\hspace{2cm}}$

a. $\left[\frac{3}{4}\right]^8$

b. $\left[\frac{3}{4}\right]^{10}$

c. $\left[\frac{3}{4}\right]^6$

d. $\left[\frac{3}{4}\right]^{12}$

8. $\left(\left(\frac{1}{9}\right)^{21}\right)^0 = \underline{\hspace{2cm}}$

a. 0

b. 1

c. $\left(\frac{1}{9}\right)^{21}$

d. $\left(\frac{1}{9}\right)^{210}$

9. $\left(\left(\frac{1}{4}\right)^{-14}\right)^2 = \underline{\hspace{2cm}}$

a. $\left(\frac{1}{4}\right)^{-12}$

b. $\left(\frac{1}{4}\right)^{-7}$

c. $\left(\frac{1}{4}\right)^{-28}$

d. $\left(\frac{1}{4}\right)^{28}$

10. $\left(\left(\frac{5}{8}\right)^{-12}\right)^{-3} = \underline{\hspace{2cm}}$

a. $\left(\frac{5}{8}\right)^{36}$

b. $\left(\frac{5}{8}\right)^4$

c. $\left(\frac{5}{8}\right)^{-15}$

d. $\left(\frac{5}{8}\right)^{15}$