

## Powers and Exponents Final Exam Review 1

- **Using Exponents to Describe Numbers**

- a. Write the expression as a power. Identify the base, the exponent and evaluate.

$$3 \times 3 \times 3 \times 3 \quad 37$$

- b. Evaluate.

$$11^2 \quad (-29)^2 \quad -(-7)^9 \quad -(3 \times 3 \times 3 \times 3)$$

- c. Does  $(-6)^6 = -6^6$ ?

- d. The volume of a cube with edge length of 6 cm is  $216 \text{ cm}^3$ . Write the volume in repeated multiplication form and exponential form.

- e. Express 262 144 as a power where the exponent is 6 and the base is positive and when the base is negative.

- **Exponent Laws**

- a. Write as a single power. Then evaluate.

$$6^5 \times 6^6 \quad (-4)^7 \times (-4)^4$$

- b. Write as a product of two powers and a single power.

$$(4 \times 4 \times 4 \times 4) \times (4 \times 4 \times 4 \times 4 \times 4) \quad (-9 \times -9 \times -9) \times (-9 \times -9 \times -9 \times -9)$$

$$-(2 \times 2 \times 2) \times (2 \times 2) \quad (1 \times 1 \times 1 \times 1) \times (3 \times 3)$$

- c. Write as a single power. Then evaluate.

$$76 \div 74 \quad (-10)^9 \div (-10)^6$$

- d. Write as a quotient of two powers then as a single power.

$$(8 \times 8 \times 8 \times 8 \times 8) \div (8 \times 8 \times 8 \times 8) \quad \frac{5 \times 5 \times 5 \times 5 \times 5 \times 5 \times 5 \times 5 \times 5}{5 \times 5 \times 5}$$

- e. Write the following as multiplication or division of two powers.

$$(-7)^{8-2} \quad (-3)^{3+1}$$

- f. Write as a single power then evaluate.

$$\frac{(8 \times 8) \times (8 \times 8) \times (8 \times 8) \times (8 \times 8)}{(8 \times 8 \times 8 \times 8)} \quad \frac{4 \times 4 \times 4 \times 4 \times 4 \times 4}{(4 \times 4 \times 4) \times (4 \times 4 \times 4)}$$

- g. Write as a single power and evaluate.

$$(5^3)^4 \quad ((-9)^2)^3$$

- h. Write as a power raised to an exponent.

$$(4 \times 4 \times 4) \times (4 \times 4 \times 4) \times (4 \times 4 \times 4) \times (4 \times 4 \times 4) \quad (5 \times 5)(5 \times 5)(5 \times 5)$$

- i. Write as a quotient of two powers and evaluate.

$$\frac{5^3}{6} \quad \frac{(-3)^6}{4}$$

- j. Write as a product of two powers and evaluate.

$$(7 \times (-3))^4 \quad (-6 \times 5)^2$$

- k. Express as a single power and evaluate.

$$(3^2)^4 \times 3^3 \quad \frac{((-4)^2)^4 \times (-4)^4}{(-4)^4} \quad (-4^3)^3$$

**Questions to Review**

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**Powers and Exponents Assignment 1**

**Powers and Exponents Quiz**