Name_

MUST SHOW STEPS WHENEVER APPROPRIATE

Classify each number as one or more of the following: natural number, whole number, integer, rational number, irrational number, or real number.

> 1) $\frac{53}{76}$ (Fraction of 9- to 10- year-old children at a day camp)

2) 834 (Number of students in the school)

3) $70\sqrt{7}$ (Length in feet of the playground)

State whether the equation is the result of an identity, commutative, associative, or distributive property.

4) -
$$(2x + 8y) = -2x - 8y$$

- 5) $(4 \cdot 3) \cdot 5 = 4 \cdot (3 \cdot 5)$
- 6) 3 + 2 = 2 + 3

16) $(5x^4)^{-3}$

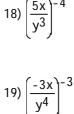
Write the number as an exponential expression using the given base.

7)
$$\frac{1}{243}$$
 (base 3)
17) $\frac{12x-4y^7}{6x^5}$

Evaluate the expression.

8) -54

9) $\left(\frac{5}{6}\right)^{-2}$



10) 3-2

11) $\frac{1}{7-3}$

Use properties of exponents to simplify. Write answers with positive exponents.

14) $\frac{3^{-2}}{3^{4}}$

15) $\frac{4^{-5}}{4^{-3}}$

Use properties of exponents to simplify. Write answers with positive exponents.. Assume variables represent nonnegative numbers.

20)
$$\frac{7^3 \text{m} \cdot 7^6 \text{m}}{7^{-7} \text{m}}$$

21)
$$\frac{8^{-6}p \cdot 8^{-8}p}{8^{7}p^{3}}$$

22)
$$\frac{x^{-7}}{(8x)^{-7}}$$

23) $\frac{(6x)^9}{x^9}$

24)
$$\frac{x^{-2}(x^{9})^{-2}}{(x^{-5})^{-5}}$$

Evaluate each expression following the order of operations.

25)
$$\frac{4^3 - 3^4}{8} + \frac{3}{4}$$

26)
$$\frac{-5^2 + 1}{\frac{2}{5}}$$

Write the number in scientific notation. 27) 76,197

28) 0.00001094

- 29) Convert 8.672 \times 10⁷ to standard form
- 30) Convert 7.0262 × 10^{-7} to standard form
- 31) If P dollars is deposited in a savings account paying r% annual interest, then the amount A in the account after x years is given by

A = P(1 +
$$\frac{r}{100}$$
)^X. Find A if P = \$300,

x = 5 years, and r = 3%.

- 32) In a certain year the Federal debt held by the public was \$1.47 trillion, while the population of the United States was 326 million.Approximate the national debt per person.
- 33) A movie opened with a first day attendance of 1,200,000. If the average cost of a ticket was \$8, how much was collected from ticket sales on the first day?

Evaluate the expression and write the answer in standard form.

$$34) \ \frac{(4 \times 10^{-4})}{(8 \times 10^{-3})}$$