Exponents & Order of Operations

1. In the expression 5^4, the base is ___ and the exponent is ___.

    What is the meaning of this expression?

    What is the value of this expression?

2. Evaluate.

    (a) 7^1 (b) 3.4^0 (c) 2^3 (d) 3^2

3. Evaluate.

    (a) $4 + 2 \cdot 3^2$ (b) $\dfrac{9}{5} \cdot \dfrac{2}{3} - \dfrac{1}{3}$ (c) $8[2 + 4(6 - 3) - 5]$

    (d) $\dfrac{2(12 - 3)}{|-3|}$ (e) $\dfrac{6 \div 3 \cdot 2}{3^2 - 1}$ (f) $6 + 9 \div 2 + 1$

4. Evaluate each expression if x = 5 and y = 3.

   (a) 2x − y

   (b) $x^2 - y^2$

   (c) $x^3 - 2y + 3$

   (d) 2(x − y)

   (e) $\dfrac{x}{y} + \dfrac{6}{y} - \dfrac{2}{3}$

Scientific Notation $a \times 10^b$ a is a decimal in the range [1, 10) and b is an integer

5. Convert the following to standard decimal numbers.

   (a) 3×10^{-4}

   (b) 9.3×10^7

   (c) 3.25×10^{12}

6. Convert the following to scientific notation.

   (a) 50,000,000,000

   (b) 0.0000000025

   (c) 740,000