

3-1 Integer Exponents

$$x^{-y} = \frac{1}{x^y}$$

$$4^{-5} = \frac{1}{4^5}$$

$$x^0 = 1$$

$$6^0 = 1$$

3-1

$$-2^4 = -(2 \times 2 \times 2 \times 2) = -16$$

$$(-2)^4 = (-2) \times (-2) \times (-2) \times (-2) = 16$$

3-2 Exponent Properties

$$X^a \cdot X^b = X^{a+b}$$

$$\frac{X^a}{X^b} = X^{a-b}$$

$$(X^a)^b = X^{a \cdot b}$$

$$3^4 \cdot 3^8 = 3^{4+8} = 3^{12}$$

$$\frac{4^2}{4^4} = 4^{2-4} = 4^{-2} = \frac{1}{4^2}$$

$$(5^3)^6 = 5^{3 \cdot 6} = 5^{18}$$

3-3 Scientific Notation

$$\underline{45600000.} = 4.56 \times 10^7$$

$$0.\underline{00000012} = 1.2 \times 10^{-6}$$

3-4 S.N. Operations

$$(1.8 \times 10^{14}) \div (9 \times 10^9)$$

$$1.8 \div 9$$

$$0.2$$

$$2 \times 10^4$$

$$10^{14} \div 10^9 = 10^{14-9}$$
$$10^5$$

x

3-4

$$(4.9 \times 10^7) + (3.5 \times 10^9)$$

* make them the same power of 10

$$(0.049 \times 10^9) + (3.5 \times 10^9)$$

$$3.549 \times 10^9$$

3-5/3-6 Square Roots

$$\sqrt{16} = \pm 4$$

$$\sqrt{81}$$

9

$$\sqrt{90}$$

9.49

$$\sqrt{100}$$

10