Worksheet basics+ Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**1.** Write the following numbers in scientific notation.

**(a)** 49,000 **(b)** 0.00007 **(c)** -3,112,221,005,107

**2.** Rewrite the following quantities in their base metric units in scientific notation.

**(a)** 2 kJ **(b)** 0.7 nW **(c)** 4.2 Gm **(d)** -2.2 cC **(e)** 81.2 MV

**3.** In all of the following scenarios, solve for B.

**(a)** **(b)** **(c)**

**(d)** **(e)** **(f)**

**(g)**

**4.** Without using a calculator, give an approximation for the following trigonometric functions.

**(a)** cos(80o) **(b)** cos(50o) **(c)** sin(10o)

**5.** You have two vectors . Use these to help you solve the following:

**(a)**   **(b)**   **(c)**   **(d)**

**6.** Answer the following questions that refer to this function: .

**(a)** Take the derivative of this function where A,B,&C are considered to be constants.

**(b)** Integrate this function with respect to x where A,B,&C are considered to be constants.

**(c)** Integrate this function with respect to A where x,B&C are considered to be constants.

**(d)** Take the derivative again. This time A&B are considered to be constants, but C is not.

**7.**  **A** has units of meters (m), **B** has units of Joules squared per second (J2/s), and **C** has units of meters cubed times a second (m3s). In each situation, solve for the units of **Q** .

**(a)**  **(b) (c) (d)**