Scientific Notation notes

Scientific Notation is writing a number with an exponent. When converting to Scientific Notation, move the decimal left or right so the number created is between 1 and 10.
Decimal notation is writing a number without an exponent. When converting to Decimal Notation, move the decimal the same amount of places as the exponent.

Look at these examples.

Convert 90,000,000 to scientific notation.

This is a LARGE number so the exponent will be POSITIVE. The rule to remember here is to move the decimal so you create a number between 1 and 10. To do this, move the decimal to the LEFT seven places so it lands after the 9 and before the 0. 9.0 is between 1 and 10

We move the decimal 7 places to the LEFT so the exponent will be a POSITIVE 7. 9.0×10^{7}

Convert 0.000 000 905 76 to scientific notation.

This is a SMALL number so the exponent will be NEGATIVE. The rule to remember here(again) is to move the decimal so you create a number between 1 and 10. To do this, move the decimal to the RIGHT 9 places so it lands after the 9 and before the 7. 9.7 is between 1 and 10

We move the decimal 9 places to the RIGHT so the exponent will be NEGATIVE 9. 9.76×10^{-9}

Write in decimal notation: 3.5×10^{12}

Since the exponent is positive, we are looking for a LARGE number. This means we move the decimal to the RIGHT. Since the exponent is "12" we move the decimal 12 places to the RIGHT and fill in with zeros.

3,500,000,000,000 this number is 3,500,000,000,000 or 3.5 trillion.

Convert 4.2×10^{-7} to decimal notation.

Since the exponent is negative, we are looking for a SMALL number. This means we move the decimal to the LEFT. Since the exponent is "7" we move the decimal 7 places to the LEFT and fill in with zeros.
The answer is 0.00000042