



Enhanced Guided Notes: Set 1

Topics:

- A. Systems of Units
 - B. Significant Figures
 - C. Powers of Ten
 - D. Conversion
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A. Systems of Units

	English	Metric		
		MKS	CGS	SI
Length				
Mass				
Force				
Temperature				
Energy				
Time				

Conclusion

After looking at the constructed table, we can conclude that...

B. Significant Figures

For an example, let's take these two different quantities:

3.5 V and **7.30 V**

What are the differences between these two quantities?

Terms:

Accuracy =

Precision =

* Examples:

$$532.6 + 4.02 + 0.036 =$$

$$0.04 + 0.003 + 0.0064 =$$

Conclusion

C. Power of Ten

0.0004

40000

Basic Arithmetic Operations

Addition and Subtraction

$$A * 10^n \pm B * 10^n =$$

* Example:

$$6300 + 75000 =$$

Conclusion

Multiplication

$$(A * 10^n) (B * 10^m) =$$

* Example:

$$(340,000) (61 * 10^{-5}) =$$

Conclusion

Division

$$\frac{(A * 10^n)}{(B * 10^m)} =$$

* Example:

$$\frac{(0.00047)}{(0.002)} =$$

Conclusion

Powers

$$(A * 10^n)^m =$$

✳ Example:

$$(0.00003)^3 =$$

Specific powers of ten in engineering notations have been assigned prefixes and symbols such as:

Multiplication Factors	SI Prefix	SI Symbol
	exa	E
	peta	P
	tera	T
	giga	G
	mega	M
	kilo	k
	milli	m
	micro	μ
	nano	n
	pico	p
	femto	f
	atto	a

D. Conversion

* Examples:

$$* 0.01 \text{ ms} = \quad \quad \quad \mu\text{s}$$

$$* 0.02 \text{ km} = \quad \quad \quad \text{mm}$$

$$* 6.8 \text{ min} = \quad \quad \quad \text{s}$$