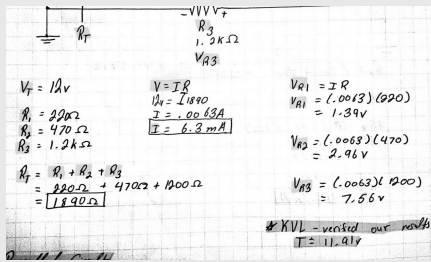
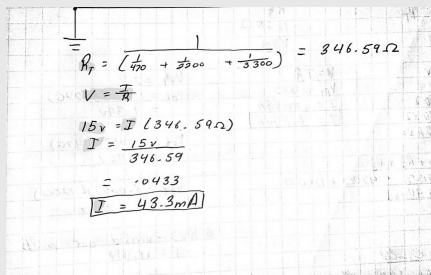


Series Circuit



- * Current flow is even throughout
- * Total resistance (R_t) is equal to the sum of all resistors
- * The sum of voltage drops ($V_{r1} + V_{r2} + V_{r3}$) is equal to the applied voltage (V_t) (Kirstoff's Law)

Parallel Circuit



- * Voltage stays the same throughout
- * The R_t is equal to the reciprocal of the sum of the reciprocal.
- * ($1/R_t = 1/R_1 + 1/R_2 + 1/R_3$) or ($R_t = 1 / (1/R_1 + 1/R_2 + 1/R_3)$)

Binary

2^8	2^7	2^6	2^5	2^4	2^3	2^2	2^1	2^0
256	128	64	32	16	8	4	2	1

AOI

- AND- 74LS08
- OR-74LS32
- Inverter-74LS04

Boolean Algebra

PLTW Engineering
Digital Electronics Equations and Theorems

Boolean Theorems:

- $X \cdot 0 = 0$
- $X \cdot 1 = X$
- $X \cdot X = X$
- $X \cdot \bar{X} = 0$
- $X + 0 = X$
- $X + 1 = 1$
- $X + X = X$
- $X + \bar{X} = 1$
- $\bar{\bar{X}} = X$

Commutative Law

- $X \cdot Y = Y \cdot X$
- $X + Y = Y + X$

Associative Law

- $X(YZ) = (XY)Z$
- $X + (Y + Z) = (X + Y) + Z$

Distributive Law

- $X(Y + Z) = XY + XZ$
- $X + Y(W + Z) = (X + YW) + (X + YZ)$

Consensus Theorems

- $X + \bar{X}Y = X + Y$
- $X + \bar{X}\bar{Y} = X + \bar{Y}$
- $\bar{X} + XY = \bar{X} + Y$
- $\bar{X} + \bar{X}\bar{Y} = \bar{X} + \bar{Y}$

DeMorgan's Theorems

- $\overline{XY} = \bar{X} + \bar{Y}$
- $\overline{X + Y} = \bar{X} \cdot \bar{Y}$

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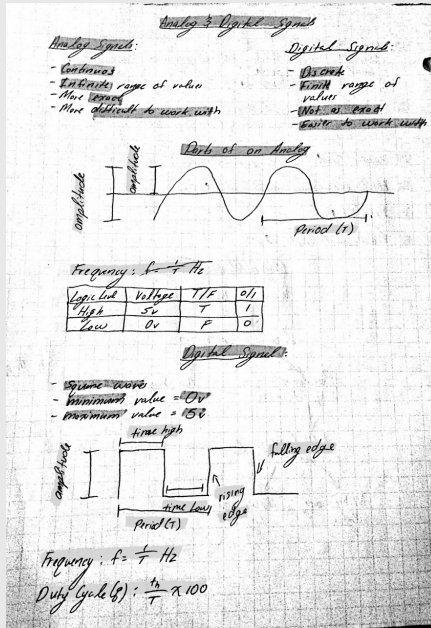
SI Prefix

SI Prefix

Value	Prefix	Symbol
10^{12}	tera	T
10^9	giga	G
10^6	mega	M
10^3	kilo	k
10^{-3}	mili	m
10^{-6}	micro	μ
10^{-9}	nano	n
10^{-12}	pico	p
10^{-15}	fermto	f



Waves



C

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