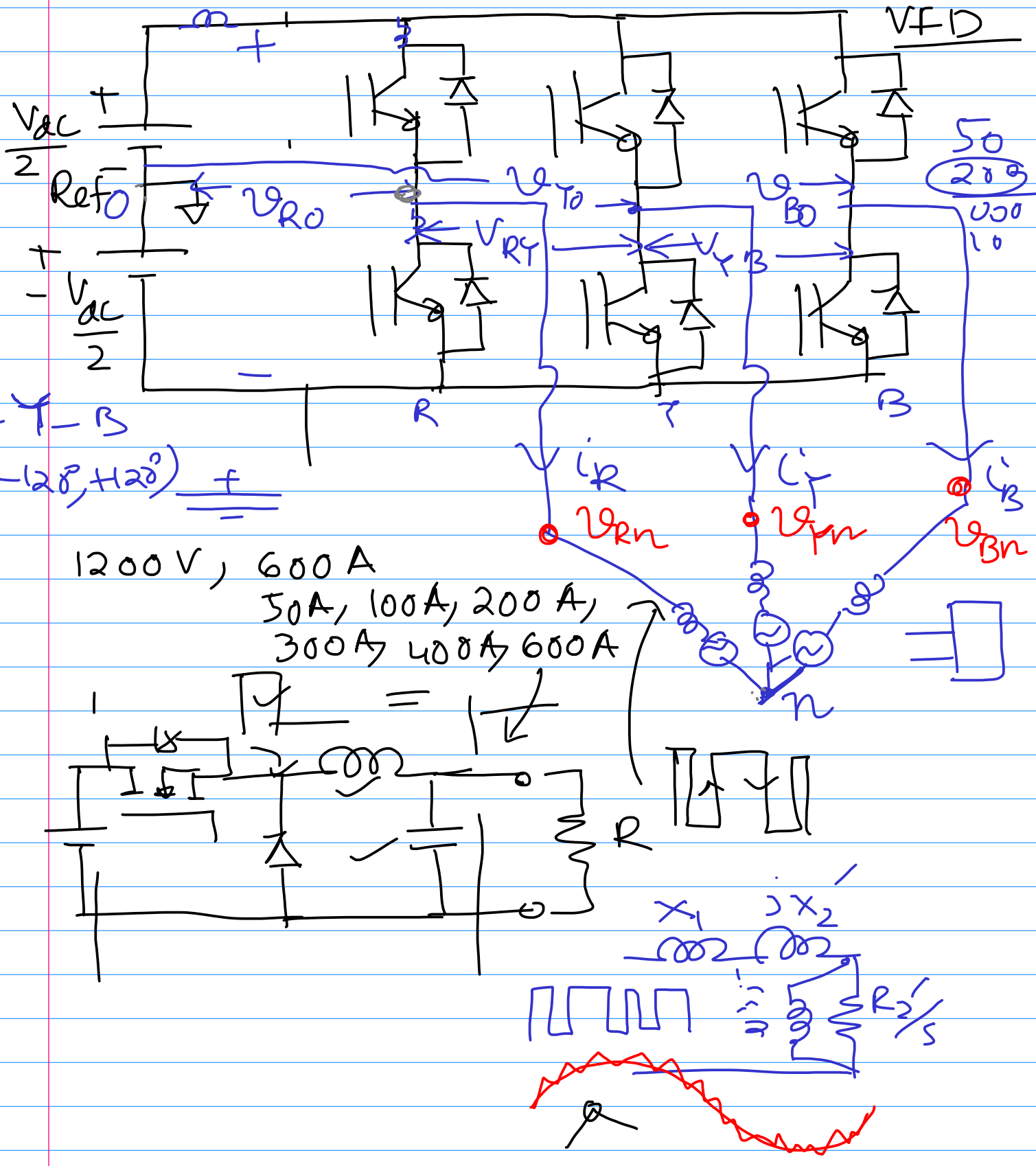
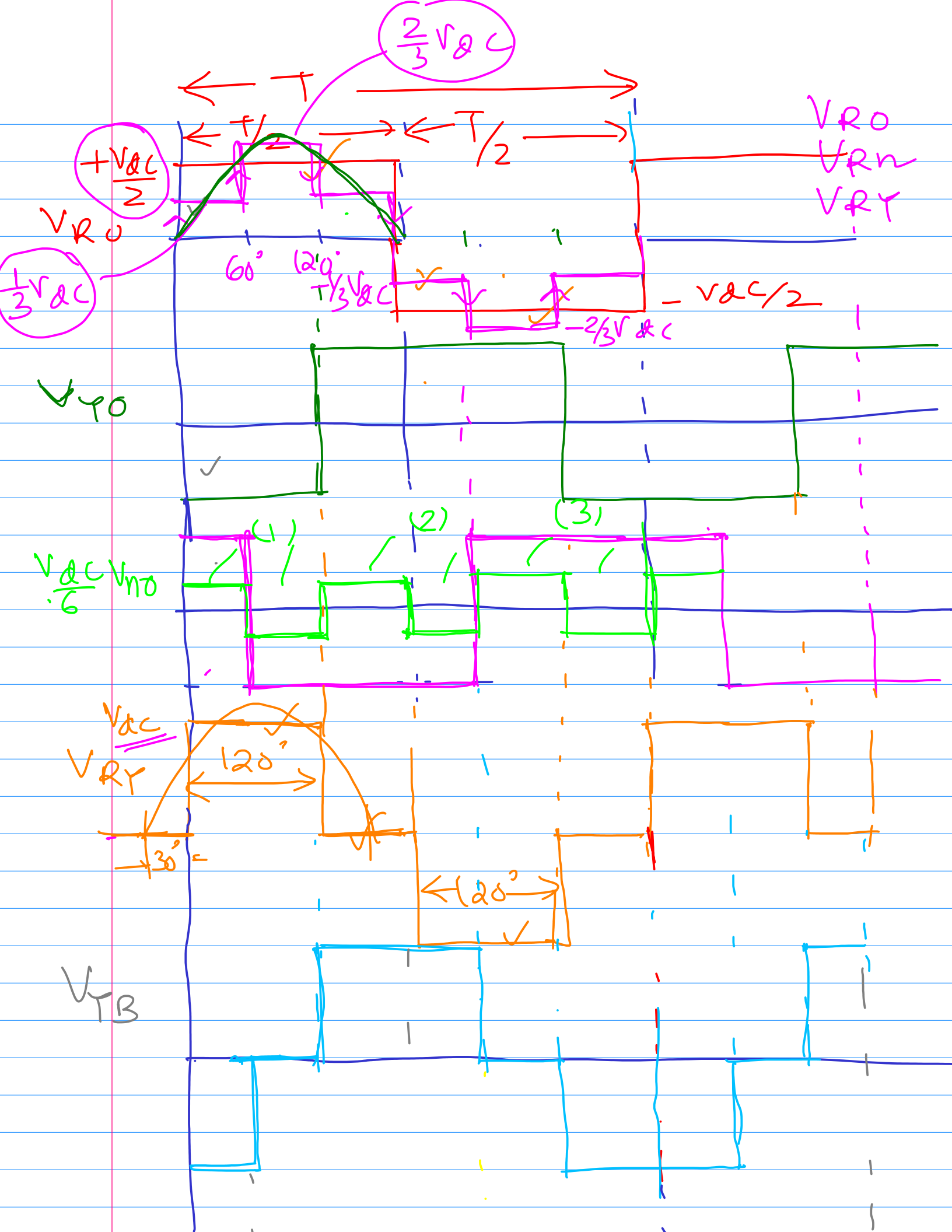
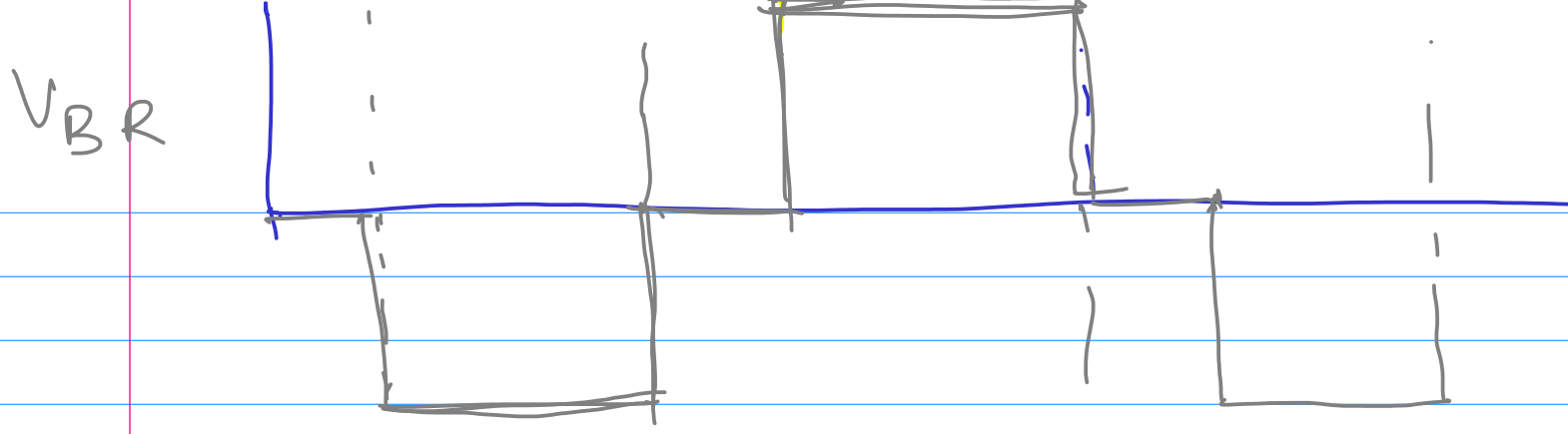
Square Wave Inverter (3 phase)




$\frac{2}{3}V_{dc}$
T
T/2
T/2
$+\frac{V_{dc}}{2}$
V_{RO}
V_{Rn}
V_{RY}
V_{RO}
$\frac{1}{3}V_{dc}$
60°
120°
$T/3\ V_{dc}$
$-V_{dc}/2$
$-2/3\ V_{dc}$
V_{YO}
(1)
(2)
(3)
$\frac{V_{dc}}{6}$ V_{no}
V_{dc}
V_{RY}
120°
30°
120°
V_{YB}



$$\begin{cases} V_{RO} = V_{Rn} + V_{nO} \\ V_{YO} = V_{Yn} + V_{nO} \\ V_{BO} = V_{Bn} + V_{nO} \end{cases}$$

$$V_{RO} + V_{YO} + V_{BO} = 0 + 3V_{nO}$$

$$V_{nO} = \frac{1}{3}(V_{RO} + V_{YO} + V_{BO})$$

$\Rightarrow$ Common Mode Voltage

$$V_{Rn} = V_{RO} - V_{nO}$$

$$= V_{RO} - \frac{1}{3}(V_{RO} + V_{YO} + V_{BO})$$

$$= \frac{2}{3}V_{RO} - \frac{1}{3}(V_{YO} + V_{BO})$$

$$V_{Yn} = \frac{2}{3}V_{YO} - \frac{1}{3}(V_{BO} + V_{RO})$$

$$V_{Bn} = \frac{2}{3}V_{BO} - \frac{1}{3}(V_{RO} + V_{YO})$$