

EGR 262

Fundamental Circuits Lab

Presentation for Lab #8

Pulse Width Modulation

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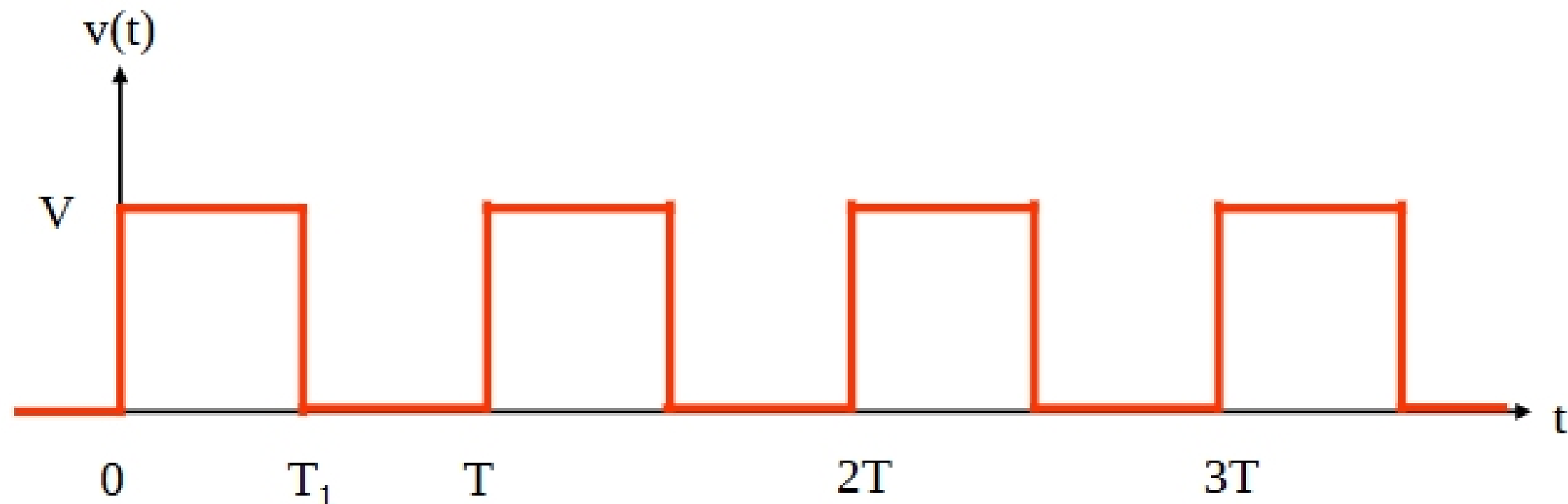
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Pulse Width Modulation

A periodic waveform can be described by $v(t) = v(t + T)$ for some positive value of T , called the *period* of the waveform. The pulse waveform below is a periodic waveform with period T . The frequency, f , of the waveform is $1/T$. T is measured in seconds and f is measured in Hertz.



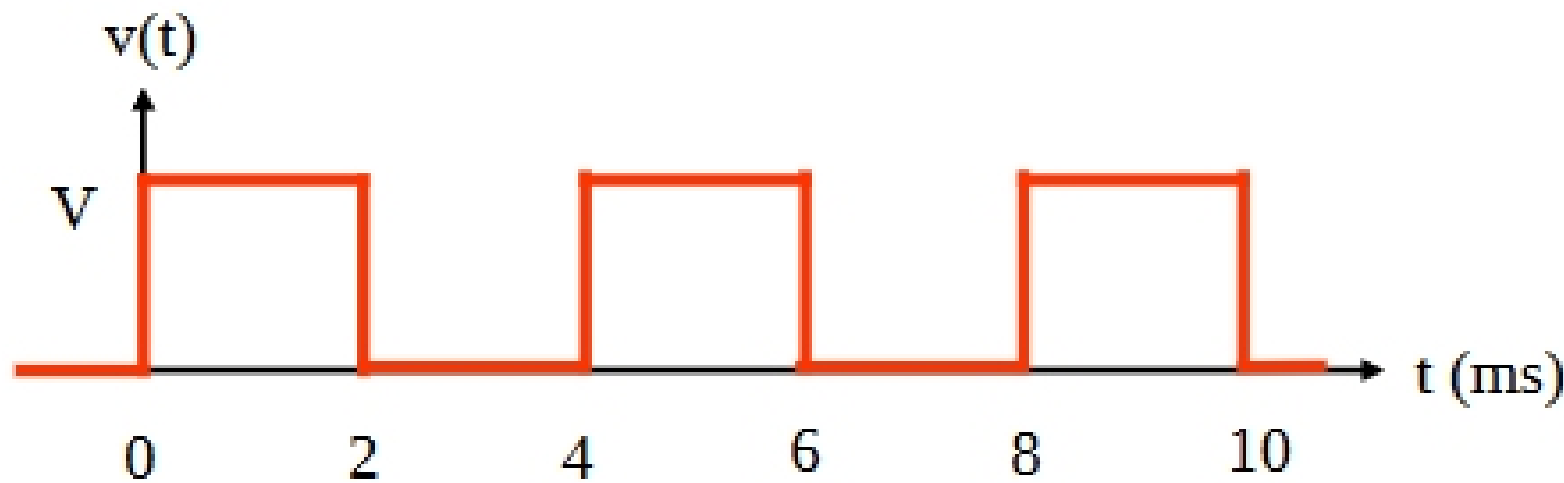
A pulse-width modulated (PWM) signal is one where T_1 can vary. The duty cycle, D , of the waveform is defined below. D is usually expressed as a percentage.

$$D = \frac{T_1}{T}$$

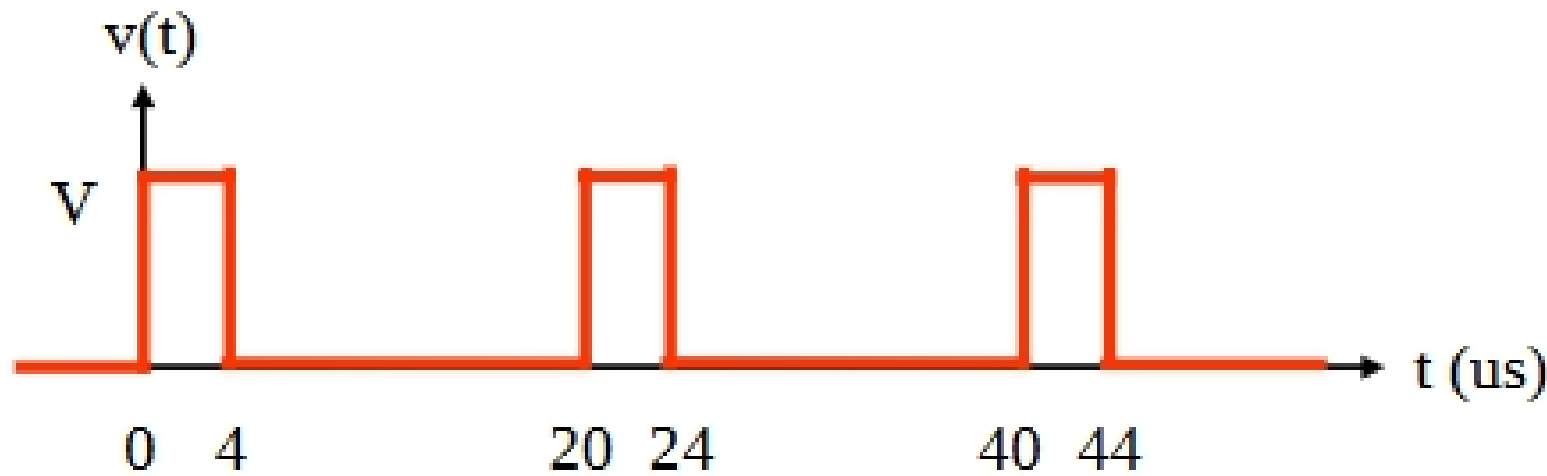
$$f = \frac{1}{T}$$

Examples:

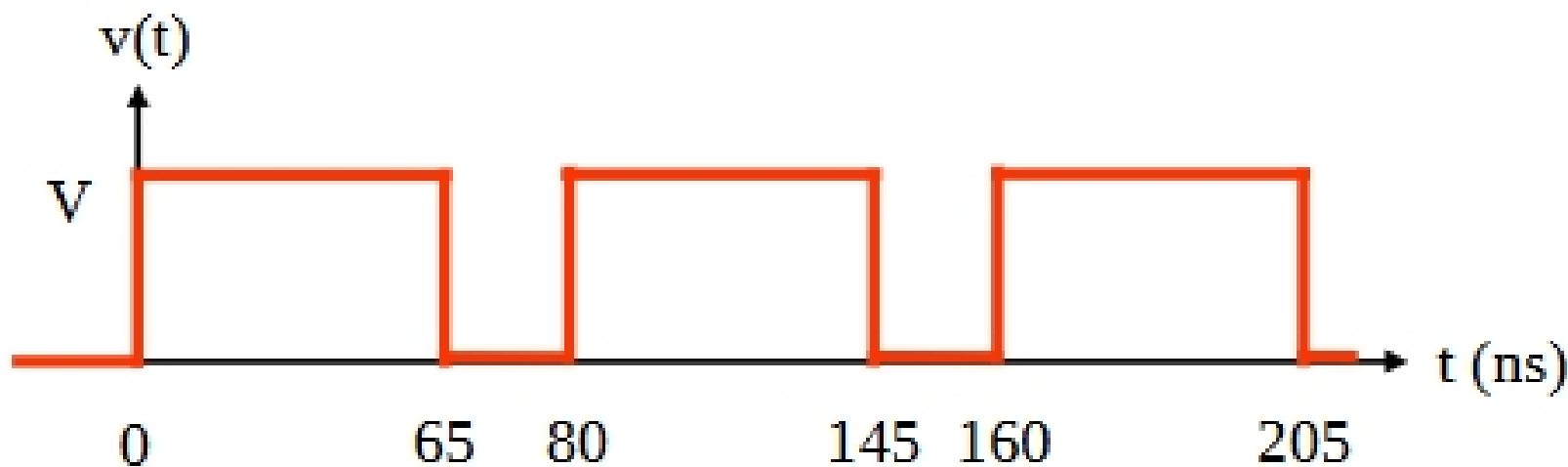
Determine the period, frequency, and duty cycle of each waveform below.



T = _____
 F = _____
 D = _____



T = _____
 F = _____
 D = _____



T = _____
 F = _____
 D = _____