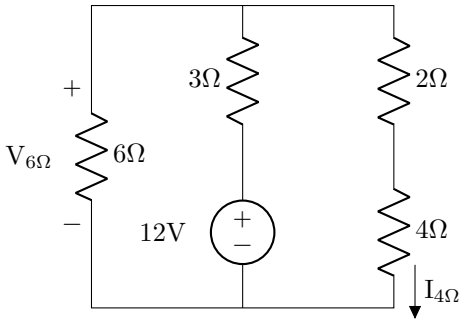
1. Analyze the following circuit:



(a) Find $I_{4\Omega}$

$I_{4\Omega}$ = 1 A

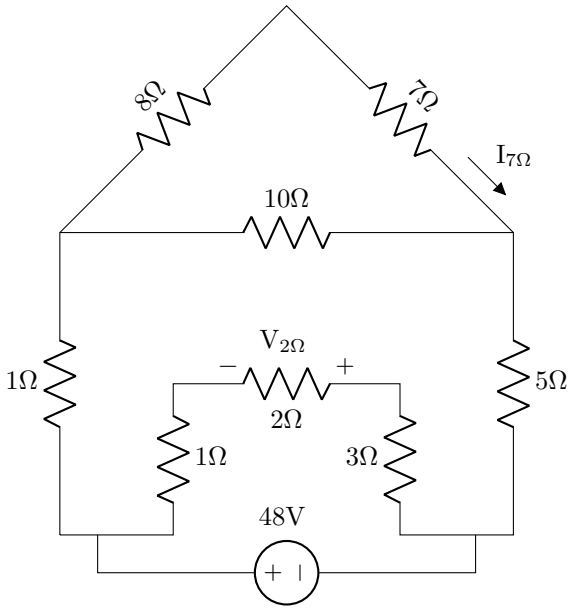
(b) Find $V_{6\Omega}$

$V_{6\Omega}$ = 6V

(c) Find the power delivered by the source.

P_s = 24W produced

2. Analyze the following circuit:



(a) Find $V_{2\Omega}$ and $I_{7\Omega}$.

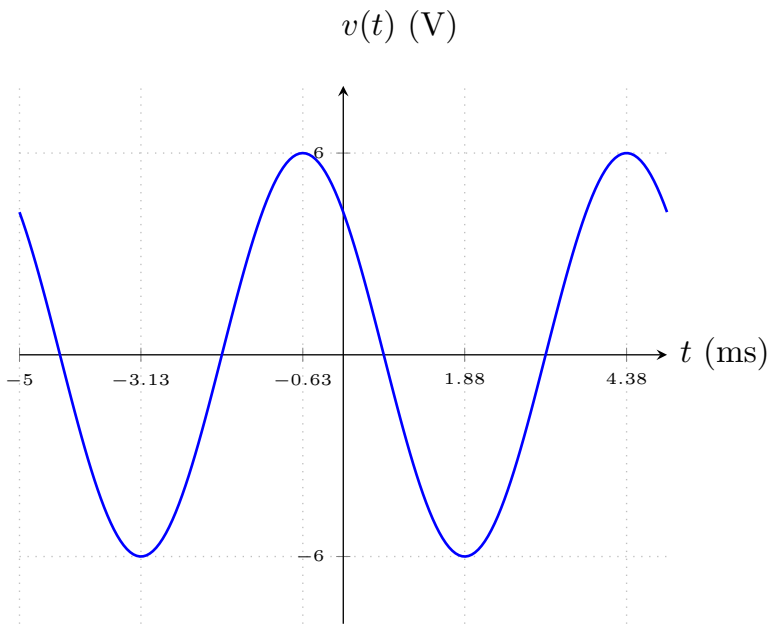
$V_{2\Omega}$ = 16V

$I_{7\Omega}$ = 1.6A

(b) What equivalent resistance does the 48V source "see"?

R_{eq} = 4Ω

3. Given the following sinusoidal waveform:



(a) Find its period and frequency in Hz (pay attention to the scaling).

T = 5 ms

f = 200 Hz

(b) What is its RMS value?

V_{RMS} = 4.243 V

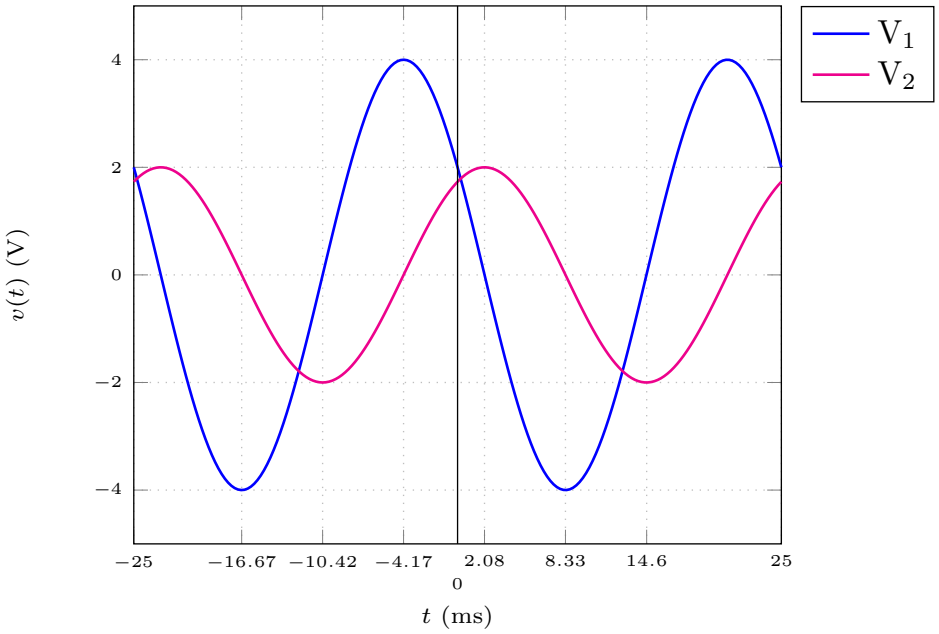
(c) Write an expression for this signal in the form of $V_{pk}\cos(\omega t + \phi_{rad})$

V(t) =

$6V \cos(1256.6\ t + .7854)$

1256.6: rad/s; .7854: rad

4. Given the following two sinusoidal waveforms, which are at the same frequency:



(a) Find its period and frequency in Hz (pay attention to the scaling).

T = 25 ms

f = 40 Hz

(b) What is its RMS amplitude of each signal?

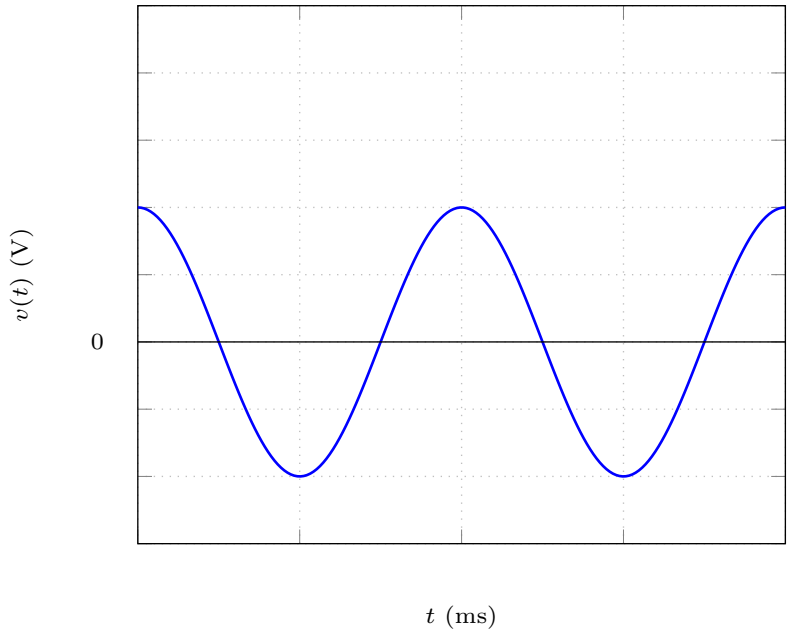
V_1 = 2.828 V

V_2 = 1.4142 V

(c) Which signal leads, and by how many **degrees**?

Answer = V_1 leads V_2 90°

5. Given the following oscilloscope waveform, where the vertical scale is set to 5V /div and the horizontal axis is set to 1ms/div:



(a) Compute the frequency in Hz.

$f =$ 500Hz

(b) Compute the RMS amplitude.

$V_{RMS} =$ 7.071V