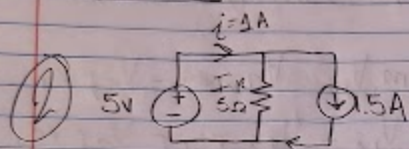
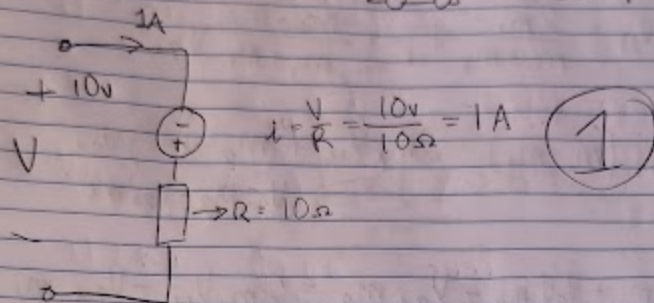


$m_1 = 50 \text{ V/s}$  ?  $m_2 = ?$   $V_{ef} = 0$  examples  
 $30 \text{ cm/s}$   $30 \text{ cm/s}$  example  
 $\alpha$   $i$



power delivered by voltage source?

$$I_R = \frac{V}{R} = \frac{5}{5} = 1 \text{ A}$$

$$\text{total current} = I + I_R = 1.5 + 1 = 2.5 \text{ A}$$

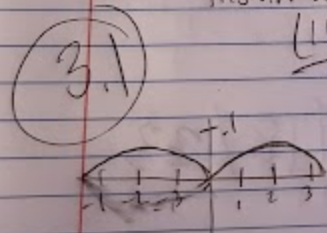
$$P = V \cdot I$$

$$5 \cdot 2.5 = 12.5 \text{ W}$$

Voltage output  
 3.  $V = 10 \sin(\omega t)$  &  $1 \text{ k}\Omega$  resistor

$$\text{Instantaneous power supplied?} = \frac{V^2}{R}$$

$$\frac{(10 \sin(\omega t))^2}{1000} = \frac{\sin^2(\omega t)}{1000}$$



3.2

average power =  $\frac{1}{T} \int V(t) dt$

~~$\frac{1}{T} \int \sin(\omega t) dt =$~~

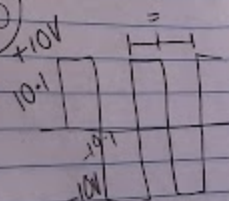
the rms of sin is .637 times peak value

$\frac{V_p}{\sqrt{2}} = \frac{\sin(\omega t)}{\sqrt{2}}$

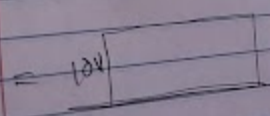
$.637 \cdot 1 = .637$

so signal average is .637 V = 63.7 mV

3.3



$\frac{f a^2}{2} = \text{RMS}$   
 $\frac{10+10}{2} = \frac{20}{2}$



~~$\text{RMS} = 10V$~~   
 ~~$W = V \cdot A$~~

$\frac{10^2 + 10^2}{1000} = \frac{200}{1000} = .2W$

~~$A = VR \quad 10 \cdot 1000 = 10000 A$~~   
 ~~$V = \frac{I}{R} \quad I = VR$~~

.2W

4 Find average voltage

$$V_{avg} = \frac{1}{\pi} \int v_p dt = \frac{1}{\pi} [2 + (-1) + 0] = .20$$

$$V_{rms} = \sqrt{\frac{2\left(\frac{2}{\sqrt{3}}\right)^2 + 1(2^2) + 2\left(\frac{2}{\sqrt{2}}\right)^2}{5}} = \frac{2.66}{5}$$

$$V_{rms} = \sqrt{\frac{2.66}{5}} = .73V$$