Electrotecnia
Programa de Tecnología Mecánica
Tarea No. 2

Para cada uno de los circuitos mostrados hallar los voltajes de nodo y, a partir de éstos, las corrientes a través de cada uno de los elementos pasivos con los sentidos de referencia de izquierda a derecha para los horizontales de arriba hacia abajo para los verticales.

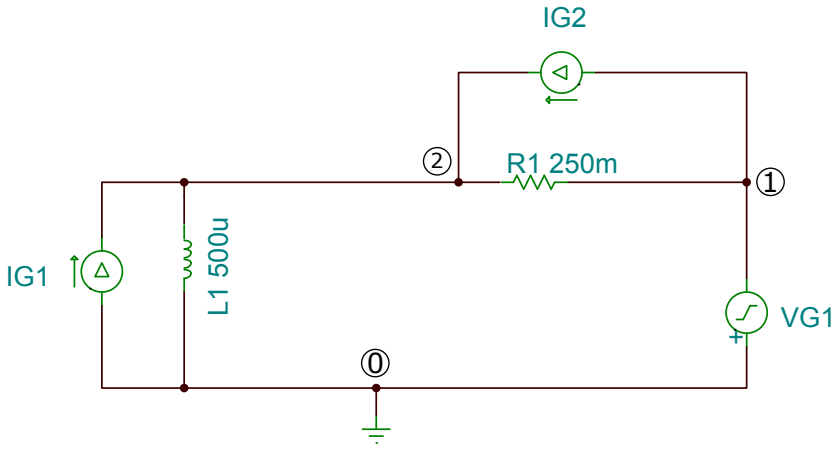

Figura 1 Circuito 1

$IG1$	$20\angle 10°$
$IG2$	$15\angle -30°$
$VG1$	$12\angle -15°$

$I_{L1}[2,0]$	$7{,}18A\angle 85{,}02°$
$I_{R1}[2,1]$	$33{,}96A\angle -19{,}22°$
$I_{VG1}[0,1]$	$19{,}42A\angle 169{,}09°$
$V_{IG1}[0,2]$	$3{,}59V\angle -4{,}98°$
$V_{IG2}[1,2]$	$8{,}49V\angle 160{,}78°$
$V_{L1}[2,0]$	$3{,}59V\angle 175{,}02°$
$V_{R1}[2,1]$	$8{,}49V\angle -19{,}22°$
$V_{VG1}[0,1]$	$12V\angle -15°$
V_{10}	$12V\angle 165°$
V_{20}	$3{,}59V\angle 175{,}02°$

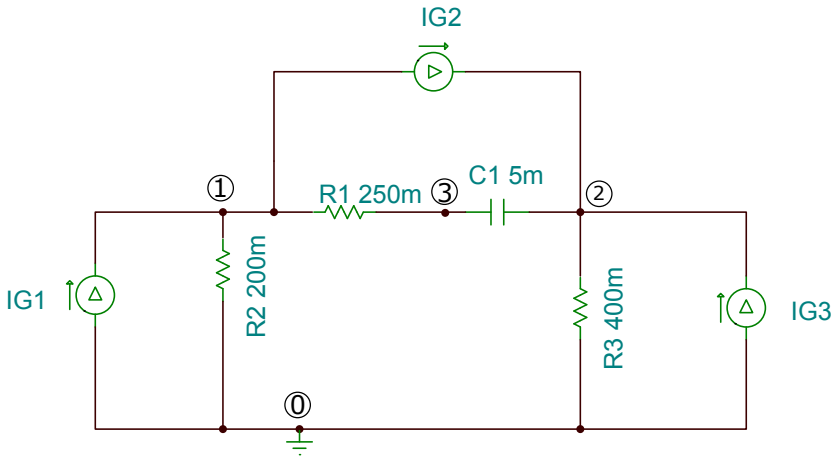

Figura 2

I_{G1}	$30\angle 40°$
I_{G2}	$20\angle 15°$
I_{G3}	$16\angle 20°$

$I_{R2}[1,3]$	$14{,}99A\angle -160{,}45°$
$I_{R3}[2,0]$	$21A\angle 15{,}56°$
$I_{R4}[1,0]$	$26{,}12A\angle 47{,}07°$
$V_{C1}[3,2]$	$3V\angle 109{,}55°$
$V_{IG1}[0,1]$	$5{,}22V\angle -132{,}93°$
$V_{IG2}[0,2]$	$8{,}4V\angle -164{,}44°$
$V_{IG3}[1,2]$	$4{,}8V\angle 160{,}89°$
$V_{R2}[1,3]$	$3{,}75V\angle -160{,}45°$
$V_{R3}[2,0]$	$8{,}4V\angle 15{,}56°$
$V_{R4}[1,0]$	$5{,}22V\angle 47{,}07°$
V_{10}	$5{,}22V\angle 47{,}07°$
V_{20}	$8{,}4V\angle 15{,}56°$
V_{30}	$8{,}72V\angle 35{,}62°$

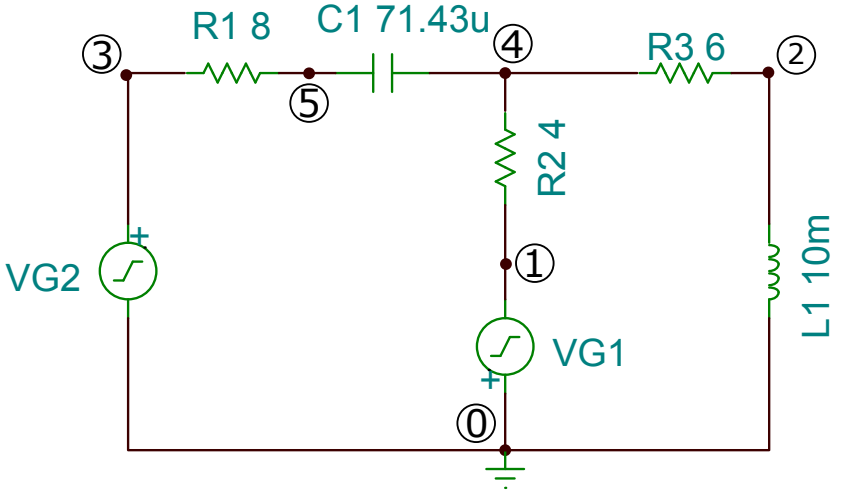

Figura 3

$VG1$	$12\angle 10°$
$VG2$	$10\angle 40°$

$I_{L1}[2,0]$	$630{,}25mA\angle 131{,}79°$
$I_{R1}[3,5]$	$974{,}47mA\angle 41{,}52°$
$I_{R2}[4,1]$	$1{,}16A\angle 8{,}7°$
$I_{R3}[4,2]$	$630{,}25mA\angle 131{,}79°$
$I_{VG1}[0,1]$	$1{,}16A\angle -171{,}3°$
$I_{VG2}[3,0]$	$974{,}47mA\angle -138{,}48°$
$V_{C1}[5,4]$	$13{,}64V\angle -48{,}48°$
$V_{L1}[2,0]$	$6{,}3V\angle -138{,}21°$
$V_{R1}[3,5]$	$7{,}8V\angle 41{,}52°$
$V_{R2}[4,1]$	$4{,}65V\angle 8{,}7°$
$V_{R3}[4,2]$	$3{,}78V\angle 131{,}79°$
$V_{VG1}[0,1]$	$12V\angle 10°$
$V_{VG2}[3,0]$	$10V\angle -40°$
V_{10}	$12V\angle -170°$
V_{20}	$6{,}3V\angle -138{,}21°$
V_{30}	$10V\angle -40°$
V_{40}	$7{,}35V\angle -169{,}18°$
V_{50}	$11{,}74V\angle -81{,}06°$

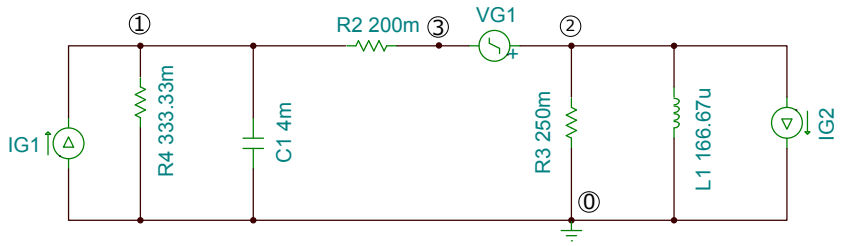

Figura 4

$IG1$	$6\angle 30°$
$IG2$	$8\angle -15°$
$VG1$	$2\angle 65°$

$I_{L1}[2,0]$	$6{,}76A\angle 66{,}13°$
$I_{R2}[1,3]$	$8{,}69A\angle 43{,}11°$
$I_{R3}[2,0]$	$4{,}51A\angle 156{,}13°$
$I_{R4}[1,0]$	$1{,}89A\angle -164{,}44°$
$I_{VG1}[2,3]$	$8{,}69A\angle -136{,}89°$
$V_{C1}[1,0]$	$630{,}51mV\angle -164{,}44°$
$V_{IG1}[0,1]$	$630{,}51mV\angle 15{,}56°$
$V_{IG2}[2,0]$	$1{,}13V\angle 156{,}13°$
$V_{L1}[2,0]$	$1{,}13V\angle 156{,}13°$
$V_{R2}[1,3]$	$1{,}74V\angle 43{,}11°$
$V_{R3}[2,0]$	$1{,}13V\angle 156{,}13°$
$V_{R4}[1,0]$	$630{,}51mV\angle -164{,}44°$
$V_{VG1}[2,3]$	$2V\angle 65°$
V_{10}	$630{,}51mV\angle -164{,}44°$
V_{20}	$1{,}13V\angle 156{,}13°$
V_{30}	$2{,}31V\angle -144{,}13°$