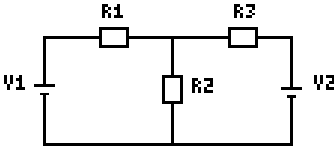
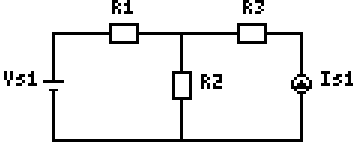
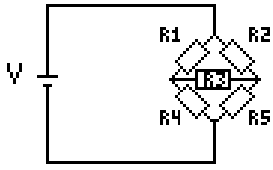
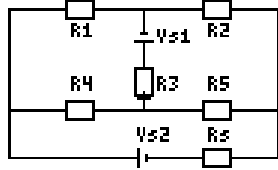
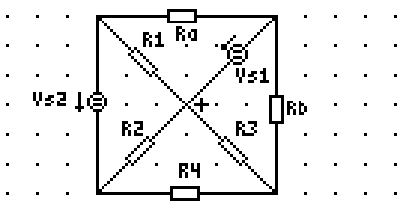
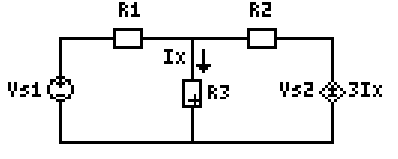
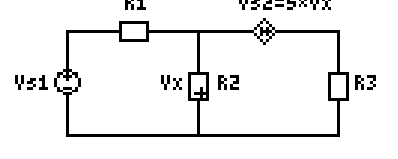
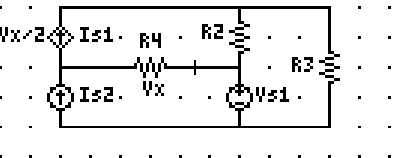
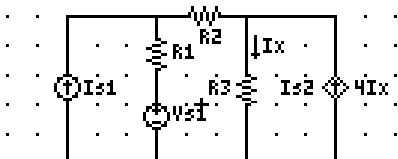


DCCIRC

<p>Dcex: examples for DC circuits</p> <p>[OK] shows list</p>	<pre> circuit examples ex1: { { { 'Vs1=28_V' ex2: { { { 'Vs1=24_V' ex3: { { { 'Vs1=01' ex4: { { { 'Vs1=15' ex5: { { { 'R1=2.1_kΩ ex6: { { { 'Vs2=-20_V ex7: { { { 'Vs1=05' ex8: { { { 'Vs1=3' 'R </pre> <p>1: [OK] [CANCEL] [OK]</p>	<pre> 4: { { { 'Vs1=28_V' 2: { { { 'R1=4_Ω 1: { { { 'R2=2_Ω { { { 'Vs2=-7_V { { { 'R3=1_Ω { { { 'R2=2_Ω </pre> <p>Dcex Dcmes QxNUM ExKIR I Lins DCINF</p>
<p>Cursor left shows the corresponding graph of circuit</p> <p>DCmesh: solves for currents and voltages in circuit (5s)</p>	 <p>08.V0 [EDIT] [CANCEL]</p>	<pre> 4: { { { 'I1=5.' 3: { { { 'I2=1.' 2: { { { 'IR1=5.' 1: { { { 'IR2=4.' { { { 'IR3=1.' { { { 'VR1=20.' { { { 'VR2=8.' { { { 'VR3=1.' </pre> <p>Dcex Dcmes QxNUM ExKIR I Lins DCINF</p>
<p>an symbolic example</p> <p>graph of circuit</p>	<pre> 4: { { { 'Vs1=01' 3: { { { 'R1=r1' 2: { { { 'R2=r2' 1: { { { 'Is1=i1' { { { 'R2=r2' { { { 'R3=r3' </pre> <p>Dcex Dcmes QxNUM ExKIR I Lins DCINF</p>	 <p>08.V0 [EDIT] [CANCEL]</p>
<p>DCmesh: solutions (7s)</p> <p>Example with supermesh</p>	<pre> 2: { { { 'r1+r2 1: { { { 'IR2= r2*i1+v1 / r1+r2 -i1 { { { 'IR3=i1 { { { 'VR1= r2*r1*i1+v1*r1 / r1+r2 { { { 'VR2= -r2*r1*i1-v1*r2 / r1+r2 { { { 'VR3=r3*i1 </pre> <p>Dcex Dcmes ExKIR IsoLW I Lins DCINF</p>	<pre> 4: { { { 'Vs1=15' 3: { { { 'R1=2' 2: { { { 'R2=5' 1: { { { 'R2=5' { { { 'Is1=1' { { { 'R3=4' { { { 'R4=3' { { { 'Is1=-1' </pre> <p>Dcex Dcmes QxNUM ExKIR I Lins DCINF</p>
<p>solutions (8s)</p> <p>QxNUM: symbolic x numeric</p>	<pre> 2: { { { 'VR1= 390 / 59 1: { { { 'VR2= 495 / 59 { { { 'VR3= 384 / 59 { { { 'VR4= 111 / 59 </pre> <p>Dcex Dcmes QxNUM ExKIR I Lins DCINF</p>	<pre> 2: { { { 'IR3= 36 / 59 1: { { { 'IR4= 37 / 59 { { { 'VR1=6.61016949153' { { { 'VR2=8.38983050847 { { { 'VR3=6.50847457627 { { { 'VR4=1.3313559322 </pre> <p>Dcex Dcmes QxNUM ExKIR I Lins DCINF</p>
<p>example with Wheatstone bridge</p> <p>graph</p>	<pre> 1: { { { 'R1=150_Ω { { { 'R4=300_Ω { { { 'R1=150_Ω { { { 'R2=50_Ω { { { 'R3=100_Ω { { { 'R3=100_Ω { { { 'R5=250_Ω { { { 'R4=300_Ω </pre> <p>Dcex Dcmes QxNUM ExKIR I Lins DCINF</p>	 <p>08.V0 [EDIT] [CANCEL]</p>
<p>DCmesh: solutions (9s)</p> <p>ExKirchhoff: examples with Kirchhoff equations</p> <p>Isolve: solution (7s)</p>	<pre> 2: { { { 'IR3=.016551724138 1: { { { 'IR4=5.88505747127E-2 { { { 'IR5=7.72413793103E-2 { { { 'VR1=6.3448275862 { { { 'VR2=4.62965517242 { { { 'VR3=1.6551724138 { { { 'VR4=17.6551724138 { { { 'VR5=19.3103448276 </pre> <p>Dcex Dcmes QxNUM ExKIR I Lins DCINF</p>	<pre> 2: { { { 'I2=I1+I3 1: { { { 'Vs1=I1*R1-I3*R3 { { { 'Vs2=I2*R2+I3*R3 { { { 'I1= (R2+R3)*Vs1+R3*Vs2 / (R2+R3)*R1+R3*R2 { { { 'I2= R3*Vs1+(R1+R3)*Vs2 / (R2+R3)*R1+R3*R2 { { { 'I3= -(R2*Vs1-R1*Vs2) / (R2+R3)*R1+R3*R2 </pre> <p>Dcex Dcmes QxNUM ExKIR I Lins DCINF</p>
<p>example</p> <p>graph of circuit</p>	<pre> { { { 'R1=2.1_kΩ' 'Vs1=12_V' 'R3= 5.6_kΩ' 'R4=4_kΩ' } { { { 'R3=5.6_kΩ ' 'Vs1=-12_V' 'R2=1_kΩ' 'R5=6.7- kΩ' } { { { 'R4=4_kΩ' 'R5=6.7_kΩ' Vs2=2_V' 'R2=0_Ω' } } </pre> <p>+SKIP SKIP- +DEL DEL- DEL L INS</p>	 <p>200W 08.V0 TRACE Fcn [EDIT] [CANCEL]</p>

DCmesh: solutions (10s)	2: 1: $\begin{cases} IR5 = -6.71820042018E-4 \\ IR6 = 4.38239352974E-4 \\ VR1 = 2.23364068304 \\ VR2 = -.233640683044 \\ VR3 = 7.26476302938 \\ VR4 = 2.5015962815 \\ VR5 = -4.50159628152 \\ VR6 = 0. \end{cases}$	<pre>{ 'Vs2=-20_V' 'R1=3_0' 'R2=2_0' } { 'R1=3_0' 'Ra=0' 'Vs1=30_V' } { 'Vs1=-30_V' 'Rb=0' 'R3=6_0' } { 'R2=2_0' 'R3=6_0' 'R4=10_0' }</pre>
next example	DCex DCmes QxNUM ExRtr I L Ins DCInf	+SKIP SKIP+ +DEL DEL+ DEL L INS =
graph of circuit		2: 1: $\begin{cases} IRa=13. \\ IRb=-7. \\ VR1=-30. \\ VR2=10. \\ VR3=-30. \\ VR4=-20. \\ VRa=0. \\ VRb=0. \end{cases}$
DCmesh: solution (11s)	DCex DCmes ExRtr IsoLW I L Ins DCInf	
symbolic example: current dependent voltage source	4: 2: 1: $\begin{cases} \begin{cases} \begin{cases} Vs1=us \\ R1=r1 \\ R3=r3 \\ R3=r3 \\ R2=r2 \end{cases} \\ \begin{cases} Vs2=-3(I1-I2) \end{cases} \end{cases}$	
graph of circuit	DCex DCmes QxNUM ExRtr I L Ins DCInf	200M QX,YO TRACE Fcn EDIT CANCEL
DCmesh: solution (14s)	2: 1: $\begin{cases} IR3 = \frac{(r2+r3-3)r1+r3r2}{(r2+r3-3)r1+r3r2} us+r2 \\ VR1 = \frac{(usr2+usr3-3us)r1}{(r2+r3-3)r1+r3r2} \\ VR2 = \frac{(usr3-3us)r2}{(r2+r3-3)r1+r3r2} \\ VR3 = \frac{usr3r2}{(r2+r3-3)r1+r3r2} \end{cases}$	4: 2: 1: $\begin{cases} \begin{cases} \begin{cases} Vs1=3 \\ R1=100 \\ R2=200 \\ R2=200 \\ Vs2=5*200*(I1-I2) \\ R3=300 \end{cases} \end{cases}$
example: voltage dependent voltage source	DCex DCmes QxNUM ExRtr I L Ins DCInf	DCex DCmes QxNUM ExRtr I L Ins DCInf
graph		2: 1: $\begin{cases} IR3 = \frac{3}{175} \\ VR1 = \frac{15}{7} \\ VR2 = \frac{6}{7} \\ VR3 = \frac{36}{7} \end{cases}$
DCmesh solutions(6s)	200M QX,YO TRACE Fcn EDIT CANCEL	DCex DCmes QxNUM ExRtr I L Ins DCInf
example: voltage dependent current source		4 < 'Is1=5*4*(I1-I2)' 'R2=2' 'R4=4' > < 'Is2=2' 'R4=4' 'Vs1=-3' > < 'Vs1=3' 'R2=2' 'R3=6' > > >
graph of circuit	+SKIP SKIP+ +DEL DEL+ DEL L INS =	200M QX,YO TRACE Fcn EDIT CANCEL
DCmesh solutions(6s)	3: 2: 1: $\begin{cases} I2=2 \\ I3=\frac{11}{8} \\ IR2=2.625 \\ IR3=1.375 \\ IR4=2. \\ VR2=5.25 \\ VR3=8.25 \\ VR4=8. \end{cases}$	4 < 'Is1=2' 'R1=7' 'Vs1=-3' > < 'Vs1=3' 'R1=7' 'R2=15' 'R3=5' > < 'R3=5' 'Is2=-4*(I2-I3)' > > >
example: current dependent current source	DCex DCmes QxNUM ExRtr I L Ins DCInf	+SKIP SKIP+ +DEL DEL+ DEL L INS =
graph of circuit		3: 2: 1: $\begin{cases} IR1=1.16393442623 \\ IR2=.83606557377 \\ IR3=-.27868852459 \\ VR1=8.14754098361 \\ VR2=12.5409836066 \\ VR3=-1.39344262295 \end{cases}$
DCmesh solutions(6s)	200M QX,YO TRACE Fcn EDIT CANCEL	DCex DCmes QxNUM ExRtr I L Ins DCInf

$\Delta \rightarrow Y$: conversion (0.8s) $Y \rightarrow \Delta$: conversion (1.8s) Rpar: parallel resistors (0.2s)	<pre> 0: 1: 2: 3: 4: 5: 6: 7: 8: 9: 10: 11: 12: 13: 14: 15: 16: 17: 18: 19: 20: 21: 22: 23: 24: 25: 26: 27: 28: 29: 30: 31: 32: 33: 34: 35: 36: 37: 38: 39: 40: 41: 42: 43: 44: 45: 46: 47: 48: 49: 50: 51: 52: 53: 54: 55: 56: 57: 58: 59: 60: 61: 62: 63: 64: 65: 66: 67: 68: 69: 70: 71: 72: 73: 74: 75: 76: 77: 78: 79: 80: 81: 82: 83: 84: 85: 86: 87: 88: 89: 90: 91: 92: 93: 94: 95: 96: 97: 98: 99: </pre> $\begin{Bmatrix} 1 & 2 & 3 \\ 1 & \frac{1}{2} & \frac{1}{3} \end{Bmatrix}$ $\begin{Bmatrix} R_a & R_b & R_c \\ R_b+R_c & R_a+R_c & R_a+R_b \end{Bmatrix}$ $\frac{R_a}{R_b+R_c+R_a+R_c+R_b} \quad \frac{R_b}{R_b+R_c+R_a+R_c+R_b}$ <p>Δ→Y Y→Δ Reset Rser Rpar Capex</p>	<pre> 0: 1: 2: 3: 4: 5: 6: 7: 8: 9: 10: 11: 12: 13: 14: 15: 16: 17: 18: 19: 20: 21: 22: 23: 24: 25: 26: 27: 28: 29: 30: 31: 32: 33: 34: 35: 36: 37: 38: 39: 40: 41: 42: 43: 44: 45: 46: 47: 48: 49: 50: 51: 52: 53: 54: 55: 56: 57: 58: 59: 60: 61: 62: 63: 64: 65: 66: 67: 68: 69: 70: 71: 72: 73: 74: 75: 76: 77: 78: 79: 80: 81: 82: 83: 84: 85: 86: 87: 88: 89: 90: 91: 92: 93: 94: 95: 96: 97: 98: 99: </pre> $\begin{Bmatrix} 800\Omega \\ 1.2\text{k}\Omega \end{Bmatrix}$ 480.0000000001Ω <p>Δ→Y Y→Δ Reset Rser Rpar Capex</p>																																
Cpar: parallel capacitors (1.7s)	<pre> 0: 1: 2: 3: 4: 5: 6: 7: 8: 9: 10: 11: 12: 13: 14: 15: 16: 17: 18: 19: 20: 21: 22: 23: 24: 25: 26: 27: 28: 29: 30: 31: 32: 33: 34: 35: 36: 37: 38: 39: 40: 41: 42: 43: 44: 45: 46: 47: 48: 49: 50: 51: 52: 53: 54: 55: 56: 57: 58: 59: 60: 61: 62: 63: 64: 65: 66: 67: 68: 69: 70: 71: 72: 73: 74: 75: 76: 77: 78: 79: 80: 81: 82: 83: 84: 85: 86: 87: 88: 89: 90: 91: 92: 93: 94: 95: 96: 97: 98: 99: </pre> $\begin{Bmatrix} 100\text{nF} \\ 2\text{mF} \end{Bmatrix}$ $.0020001\text{F}$ <p>Cser Cpar Index Indsc Indpd DCeq</p>	<pre> 0: 1: 2: 3: 4: 5: 6: 7: 8: 9: 10: 11: 12: 13: 14: 15: 16: 17: 18: 19: 20: 21: 22: 23: 24: 25: 26: 27: 28: 29: 30: 31: 32: 33: 34: 35: 36: 37: 38: 39: 40: 41: 42: 43: 44: 45: 46: 47: 48: 49: 50: 51: 52: 53: 54: 55: 56: 57: 58: 59: 60: 61: 62: 63: 64: 65: 66: 67: 68: 69: 70: 71: 72: 73: 74: 75: 76: 77: 78: 79: 80: 81: 82: 83: 84: 85: 86: 87: 88: 89: 90: 91: 92: 93: 94: 95: 96: 97: 98: 99: </pre> $\begin{Bmatrix} C1 \\ C2 \\ C3 \end{Bmatrix}$ $\frac{1}{\frac{1}{C1} + \frac{1}{C2} + \frac{1}{C3}}$ <p>Cser Cpar Index Indsc Indpd DCeq</p>																																
Lpar: parallel inductors (0.2s)	<pre> 0: 1: 2: 3: 4: 5: 6: 7: 8: 9: 10: 11: 12: 13: 14: 15: 16: 17: 18: 19: 20: 21: 22: 23: 24: 25: 26: 27: 28: 29: 30: 31: 32: 33: 34: 35: 36: 37: 38: 39: 40: 41: 42: 43: 44: 45: 46: 47: 48: 49: 50: 51: 52: 53: 54: 55: 56: 57: 58: 59: 60: 61: 62: 63: 64: 65: 66: 67: 68: 69: 70: 71: 72: 73: 74: 75: 76: 77: 78: 79: 80: 81: 82: 83: 84: 85: 86: 87: 88: 89: 90: 91: 92: 93: 94: 95: 96: 97: 98: 99: </pre> $\begin{Bmatrix} 100\text{mH} \\ .2\text{H} \end{Bmatrix}$ $6.66666666667\text{E}-2\text{H}$ <p>Cser Cpar Index Indsc Indpd DCeq</p>	<pre> 0: 1: 2: 3: 4: 5: 6: 7: 8: 9: 10: 11: 12: 13: 14: 15: 16: 17: 18: 19: 20: 21: 22: 23: 24: 25: 26: 27: 28: 29: 30: 31: 32: 33: 34: 35: 36: 37: 38: 39: 40: 41: 42: 43: 44: 45: 46: 47: 48: 49: 50: 51: 52: 53: 54: 55: 56: 57: 58: 59: 60: 61: 62: 63: 64: 65: 66: 67: 68: 69: 70: 71: 72: 73: 74: 75: 76: 77: 78: 79: 80: 81: 82: 83: 84: 85: 86: 87: 88: 89: 90: 91: 92: 93: 94: 95: 96: 97: 98: 99: </pre> <p>Voltage source: $(V=V0-RiI)$ Current source: $(I=I0-\frac{V}{Ri})$ capacitor: $(I(t)=C\frac{d}{dt}(V(t)))$ capacity: $(C=\frac{Q}{d})$</p> <p>TEXT OK</p>																																
DCeq: DC equations	<pre> 0: 1: 2: 3: 4: 5: 6: 7: 8: 9: 10: 11: 12: 13: 14: 15: 16: 17: 18: 19: 20: 21: 22: 23: 24: 25: 26: 27: 28: 29: 30: 31: 32: 33: 34: 35: 36: 37: 38: 39: 40: 41: 42: 43: 44: 45: 46: 47: 48: 49: 50: 51: 52: 53: 54: 55: 56: 57: 58: 59: 60: 61: 62: 63: 64: 65: 66: 67: 68: 69: 70: 71: 72: 73: 74: 75: 76: 77: 78: 79: 80: 81: 82: 83: 84: 85: 86: 87: 88: 89: 90: 91: 92: 93: 94: 95: 96: 97: 98: 99: </pre> <p>DC circuit with R,L,C</p> <p>RCser_Vs: $I(t)=I0 \times e^{-\frac{t}{RiC}}$ RCser_Is: $V(t)=I0 \times R$ RCpar_Is: $V(t)=I0 \times R$ RLser_Vs: $I(t)=V0 \times R$ RLpar_Vs: $I(t)=V0 \times R$ RLpar_Is: $V(t)=I0 \times R$</p> <p>Cser Cpar Index Indsc Indpd DCeq</p>	<pre> 0: 1: 2: 3: 4: 5: 6: 7: 8: 9: 10: 11: 12: 13: 14: 15: 16: 17: 18: 19: 20: 21: 22: 23: 24: 25: 26: 27: 28: 29: 30: 31: 32: 33: 34: 35: 36: 37: 38: 39: 40: 41: 42: 43: 44: 45: 46: 47: 48: 49: 50: 51: 52: 53: 54: 55: 56: 57: 58: 59: 60: 61: 62: 63: 64: 65: 66: 67: 68: 69: 70: 71: 72: 73: 74: 75: 76: 77: 78: 79: 80: 81: 82: 83: 84: 85: 86: 87: 88: 89: 90: 91: 92: 93: 94: 95: 96: 97: 98: 99: </pre> <p>RCser_Vs:</p> $I(t)=\frac{V0}{R}e^{-\frac{t}{RiC}}$ $V(t)=V0\left(1-e^{-\frac{t}{RiC}}\right)$ $V(t)=V0e^{-\frac{t}{RiC}}$ <p>RLCeq ExCol ColCo DCGro DCGro DCGro GrObt</p>																																
RLCeq: equations for RLC	<pre> 0: 1: 2: 3: 4: 5: 6: 7: 8: 9: 10: 11: 12: 13: 14: 15: 16: 17: 18: 19: 20: 21: 22: 23: 24: 25: 26: 27: 28: 29: 30: 31: 32: 33: 34: 35: 36: 37: 38: 39: 40: 41: 42: 43: 44: 45: 46: 47: 48: 49: 50: 51: 52: 53: 54: 55: 56: 57: 58: 59: 60: 61: 62: 63: 64: 65: 66: 67: 68: 69: 70: 71: 72: 73: 74: 75: 76: 77: 78: 79: 80: 81: 82: 83: 84: 85: 86: 87: 88: 89: 90: 91: 92: 93: 94: 95: 96: 97: 98: 99: </pre> <p>RCser_Vs: $I(t)=I0 \times e^{-\frac{t}{RiC}}$ RCser_Is: $V(t)=I0 \times R$ RCpar_Is: $V(t)=I0 \times R$ RLser_Vs: $I(t)=V0 \times R$ RLpar_Vs: $I(t)=V0 \times R$ RLpar_Is: $V(t)=I0 \times R$</p> <p>Cser Cpar Index Indsc Indpd DCeq</p>	<pre> 0: 1: 2: 3: 4: 5: 6: 7: 8: 9: 10: 11: 12: 13: 14: 15: 16: 17: 18: 19: 20: 21: 22: 23: 24: 25: 26: 27: 28: 29: 30: 31: 32: 33: 34: 35: 36: 37: 38: 39: 40: 41: 42: 43: 44: 45: 46: 47: 48: 49: 50: 51: 52: 53: 54: 55: 56: 57: 58: 59: 60: 61: 62: 63: 64: 65: 66: 67: 68: 69: 70: 71: 72: 73: 74: 75: 76: 77: 78: 79: 80: 81: 82: 83: 84: 85: 86: 87: 88: 89: 90: 91: 92: 93: 94: 95: 96: 97: 98: 99: </pre> <table border="1"> <tr><td>black</td><td>0</td><td>1</td><td>x</td></tr> <tr><td>brown</td><td>1</td><td>10</td><td>1</td></tr> <tr><td>red</td><td>2</td><td>100</td><td>2</td></tr> <tr><td>orange</td><td>3</td><td>1000</td><td>x</td></tr> <tr><td>yellow</td><td>4</td><td>10000</td><td>x</td></tr> <tr><td>green</td><td>5</td><td>100000</td><td>.5</td></tr> <tr><td>blue</td><td>6</td><td>1000000</td><td>.25</td></tr> <tr><td>violet</td><td>7</td><td>10000000</td><td>.1</td></tr> </table> <p>TEXT OK</p>	black	0	1	x	brown	1	10	1	red	2	100	2	orange	3	1000	x	yellow	4	10000	x	green	5	100000	.5	blue	6	1000000	.25	violet	7	10000000	.1
black	0	1	x																															
brown	1	10	1																															
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orange	3	1000	x																															
yellow	4	10000	x																															
green	5	100000	.5																															
blue	6	1000000	.25																															
violet	7	10000000	.1																															
Resistor color code for four or five colors (0.7s)	<pre> 0: 1: 2: 3: 4: 5: 6: 7: 8: 9: 10: 11: 12: 13: 14: 15: 16: 17: 18: 19: 20: 21: 22: 23: 24: 25: 26: 27: 28: 29: 30: 31: 32: 33: 34: 35: 36: 37: 38: 39: 40: 41: 42: 43: 44: 45: 46: 47: 48: 49: 50: 51: 52: 53: 54: 55: 56: 57: 58: 59: 60: 61: 62: 63: 64: 65: 66: 67: 68: 69: 70: 71: 72: 73: 74: 75: 76: 77: 78: 79: 80: 81: 82: 83: 84: 85: 86: 87: 88: 89: 90: 91: 92: 93: 94: 95: 96: 97: 98: 99: </pre> <p>yellow red orange black gold "423±5%"</p> <p>RLCeq ExCol ColCo DCGro DCGro GrObt</p>	<pre> 0: 1: 2: 3: 4: 5: 6: 7: 8: 9: 10: 11: 12: 13: 14: 15: 16: 17: 18: 19: 20: 21: 22: 23: 24: 25: 26: 27: 28: 29: 30: 31: 32: 33: 34: 35: 36: 37: 38: 39: 40: 41: 42: 43: 44: 45: 46: 47: 48: 49: 50: 51: 52: 53: 54: 55: 56: 57: 58: 59: 60: 61: 62: 63: 64: 65: 66: 67: 68: 69: 70: 71: 72: 73: 74: 75: 76: 77: 78: 79: 80: 81: 82: 83: 84: 85: 86: 87: 88: 89: 90: 91: 92: 93: 94: 95: 96: 97: 98: 99: </pre> <table border="1"> <tr><td>black</td><td>0</td><td>1</td><td>x</td></tr> <tr><td>brown</td><td>1</td><td>10</td><td>1</td></tr> <tr><td>red</td><td>2</td><td>100</td><td>2</td></tr> <tr><td>orange</td><td>3</td><td>1000</td><td>x</td></tr> <tr><td>yellow</td><td>4</td><td>10000</td><td>x</td></tr> <tr><td>green</td><td>5</td><td>100000</td><td>.5</td></tr> <tr><td>blue</td><td>6</td><td>1000000</td><td>.25</td></tr> <tr><td>violet</td><td>7</td><td>10000000</td><td>.1</td></tr> </table> <p>TEXT OK</p>	black	0	1	x	brown	1	10	1	red	2	100	2	orange	3	1000	x	yellow	4	10000	x	green	5	100000	.5	blue	6	1000000	.25	violet	7	10000000	.1
black	0	1	x																															
brown	1	10	1																															
red	2	100	2																															
orange	3	1000	x																															
yellow	4	10000	x																															
green	5	100000	.5																															
blue	6	1000000	.25																															
violet	7	10000000	.1																															
color code table	<pre> 0: 1: 2: 3: 4: 5: 6: 7: 8: 9: 10: 11: 12: 13: 14: 15: 16: 17: 18: 19: 20: 21: 22: 23: 24: 25: 26: 27: 28: 29: 30: 31: 32: 33: 34: 35: 36: 37: 38: 39: 40: 41: 42: 43: 44: 45: 46: 47: 48: 49: 50: 51: 52: 53: 54: 55: 56: 57: 58: 59: 60: 61: 62: 63: 64: 65: 66: 67: 68: 69: 70: 71: 72: 73: 74: 75: 76: 77: 78: 79: 80: 81: 82: 83: 84: 85: 86: 87: 88: 89: 90: 91: 92: 93: 94: 95: 96: 97: 98: 99: </pre> <p>choose picture</p> <p>V++: Graphic 7 x 12 V--: Graphic 7 x 12 V++: Graphic 12 x 7 V--: Graphic 12 x 7 Rt: Graphic 7 x 12 R+: Graphic 12 x 7 "R+": Graphic 12 x 12 "R-": Graphic 12 x 12</p> <p>CANCEL OK</p>	<pre> 0: 1: 2: 3: 4: 5: 6: 7: 8: 9: 10: 11: 12: 13: 14: 15: 16: 17: 18: 19: 20: 21: 22: 23: 24: 25: 26: 27: 28: 29: 30: 31: 32: 33: 34: 35: 36: 37: 38: 39: 40: 41: 42: 43: 44: 45: 46: 47: 48: 49: 50: 51: 52: 53: 54: 55: 56: 57: 58: 59: 60: 61: 62: 63: 64: 65: 66: 67: 68: 69: 70: 71: 72: 73: 74: 75: 76: 77: 78: 79: 80: 81: 82: 83: 84: 85: 86: 87: 88: 89: 90: 91: 92: 93: 94: 95: 96: 97: 98: 99: </pre> <p>choose picture</p> <p>Ist: Graphic 9 x 9 Is+: Graphic 9 x 9 Is-: Graphic 9 x 9 Vs++: Graphic 9 x 9 Vs--: Graphic 9 x 9 Vs++: Graphic 9 x 9 Vs--: Graphic 9 x 9 Vs++: Graphic 9 x 9 Vs--: Graphic 9 x 9</p> <p>CANCEL OK</p>																																
DCGrob: choose graphic object (grob)	<pre> 0: 1: 2: 3: 4: 5: 6: 7: 8: 9: 10: 11: 12: 13: 14: 15: 16: 17: 18: 19: 20: 21: 22: 23: 24: 25: 26: 27: 28: 29: 30: 31: 32: 33: 34: 35: 36: 37: 38: 39: 40: 41: 42: 43: 44: 45: 46: 47: 48: 49: 50: 51: 52: 53: 54: 55: 56: 57: 58: 59: 60: 61: 62: 63: 64: 65: 66: 67: 68: 69: 70: 71: 72: 73: 74: 75: 76: 77: 78: 79: 80: 81: 82: 83: 84: 85: 86: 87: 88: 89: 90: 91: 92: 93: 94: 95: 96: 97: 98: 99: </pre> <p>choose picture</p> <p>Vd++: Graphic 9 x 9 Vd--: Graphic 9 x 9 Vd++: Graphic 9 x 9 Vd--: Graphic 9 x 9 Id+: Graphic 9 x 9 Id-: Graphic 9 x 9 Id+: Graphic 9 x 9 Id-: Graphic 9 x 9</p> <p>CANCEL OK</p>	<pre> 0: 1: 2: 3: 4: 5: 6: 7: 8: 9: 10: 11: 12: 13: 14: 15: 16: 17: 18: 19: 20: 21: 22: 23: 24: 25: 26: 27: 28: 29: 30: 31: 32: 33: 34: 35: 36: 37: 38: 39: 40: 41: 42: 43: 44: 45: 46: 47: 48: 49: 50: 51: 52: 53: 54: 55: 56: 57: 58: 59: 60: 61: 62: 63: 64: 65: 66: 67: 68: 69: 70: 71: 72: 73: 74: 75: 76: 77: 78: 79: 80: 81: 82: 83: 84: 85: 86: 87: 88: 89: 90: 91: 92: 93: 94: 95: 96: 97: 98: 99: </pre> <p>choose picture</p> <p>Id+: Graphic 9 x 9 Id-: Graphic 9 x 9 Id+: Graphic 9 x 9 Rt+: Graphic 7 x 13 Rt-: Graphic 13 x 7 Rt+: Graphic 13 x 13 Rt-: Graphic 13 x 13 Vt: Graphic 7 x 7</p> <p>CANCEL OK</p>																																
DCGrob	<pre> 0: 1: 2: 3: 4: 5: 6: 7: 8: 9: 10: 11: 12: 13: 14: 15: 16: 17: 18: 19: 20: 21: 22: 23: 24: 25: 26: 27: 28: 29: 30: 31: 32: 33: 34: 35: 36: 37: 38: 39: 40: 41: 42: 43: 44: 45: 46: 47: 48: 49: 50: 51: 52: 53: 54: 55: 56: 57: 58: 59: 60: 61: 62: 63: 64: 65: 66: 67: 68: 69: 70: 71: 72: 73: 74: 75: 76: 77: 78: 79: 80: 81: 82: 83: 84: 85: 86: 87: 88: 89: 90: 91: 92: 93: 94: 95: 96: 97: 98: 99: </pre> <p>choose picture</p> <p>Vd++: Graphic 9 x 9 Vd--: Graphic 9 x 9 Vd++: Graphic 9 x 9 Vd--: Graphic 9 x 9 Id+: Graphic 9 x 9 Id-: Graphic 9 x 9 Id+: Graphic 9 x 9 Id-: Graphic 9 x 9</p> <p>CANCEL OK</p>	<pre> 0: 1: 2: 3: 4: 5: 6: 7: 8: 9: 10: 11: 12: 13: 14: 15: 16: 17: 18: 19: 20: 21: 22: 23: 24: 25: 26: 27: 28: 29: 30: 31: 32: 33: 34: 35: 36: 37: 38: 39: 40: 41: 42: 43: 44: 45: 46: 47: 48: 49: 50: 51: 52: 53: 54: 55: 56: 57: 58: 59: 60: 61: 62: 63: 64: 65: 66: 67: 68: 69: 70: 71: 72: 73: 74: 75: 76: 77: 78: 79: 80: 81: 82: 83: 84: 85: 86: 87: 88: 89: 90: 91: 92: 93: 94: 95: 96: 97: 98: 99: </pre> <p>choose picture</p> <p>Id+: Graphic 9 x 9 Id-: Graphic 9 x 9 Id+: Graphic 9 x 9 Rt+: Graphic 7 x 13 Rt-: Graphic 13 x 7 Rt+: Graphic 13 x 13 Rt-: Graphic 13 x 13 Vt: Graphic 7 x 7</p> <p>CANCEL OK</p>																																
DCinfo: info on circuits	<pre> 0: 1: 2: 3: 4: 5: 6: 7: 8: 9: 10: 11: 12: 13: 14: 15: 16: 17: 18: 19: 20: 21: 22: 23: 24: 25: 26: 27: 28: 29: 30: 31: 32: 33: 34: 35: 36: 37: 38: 39: 40: 41: 42: 43: 44: 45: 46: 47: 48: 49: 50: 51: 52: 53: 54: 55: 56: 57: 58: 59: 60: 61: 62: 63: 64: 65: 66: 67: 68: 69: 70: 71: 72: 73: 74: 75: 76: 77: 78: 79: 80: 81: 82: 83: 84: 85: 86: 87: 88: 89: 90: 91: 92: 93: 94: 95: 96: 97: 98: 99: </pre> <p>Mesh current (loop) analysis For planar DC circuits:</p> <p>You can assume conventional voltage sources (external + -) and draw clockwise current loops in every mesh. Voltage source is positive if it has the same direction as the mesh current. Flow else negative. The same is valid for current sources.</p> <p>GRAPH OK</p>	<pre> 0: 1: 2: 3: 4: 5: 6: 7: 8: 9: 10: 11: 12: 13: 14: 15: 16: 17: 18: 19: 20: 21: 22: 23: 24: 25: 26: 27: 28: 29: 30: 31: 32: 33: 34: 35: 36: 37: 38: 39: 40: 41: 42: 43: 44: 45: 46: 47: 48: 49: 50: 51: 52: 53: 54: 55: 56: 57: 58: 59: 60: 61: 62: 63: 64: 65: 66: 67: 68: 69: 70: 71: 72: 73: 74: 75: 76: 77: 78: 79: 80: 81: 82: 83: 84: 85: 86: 87: 88: 89: 90: 91: 92: 93: 94: 95: 96: 97: 98: 99: </pre> <p>Input of DC-circuit:</p> <pre> { 'Vs1=u1' 'Is1=Is1' 'Rt=Rt'... } { 'Vs2=u2' 'Is2=Is2' 'Rt=Rt'... } { 'Vs3=u3' 'Is3=Is3' 'Rt=Rt'... } { 'Vs4=u4' 'Is4=Is4' 'Rt=Rt'... } { 'Vs5=u5' 'Is5=Is5' 'Rt=Rt'... } { 'Vs6=u6' 'Is6=Is6' 'Rt=Rt'... } { 'Vs7=u7' 'Is7=Is7' 'Rt=Rt'... } { 'Vs8=u8' 'Is8=Is8' 'Rt=Rt'... } { 'Vs9=u9' 'Is9=Is9' 'Rt=Rt'... } { 'Vs10=u10' 'Is10=Is10' 'Rt=Rt'... } { 'Vs11=u11' 'Is11=Is11' 'Rt=Rt'... } { 'Vs12=u12' 'Is12=Is12' 'Rt=Rt'... } { 'Vs13=u13' 'Is13=Is13' 'Rt=Rt'... } { 'Vs14=u14' 'Is14=Is14' 'Rt=Rt'... } { 'Vs15=u15' 'Is15=Is15' 'Rt=Rt'... } { 'Vs16=u16' 'Is16=Is16' 'Rt=Rt'... } { 'Vs17=u17' 'Is17=Is17' 'Rt=Rt'... } { 'Vs18=u18' 'Is18=Is18' 'Rt=Rt'... } { 'Vs19=u19' 'Is19=Is19' 'Rt=Rt'... } { 'Vs20=u20' 'Is20=Is20' 'Rt=Rt'... } { 'Vs21=u21' 'Is21=Is21' 'Rt=Rt'... } { 'Vs22=u22' 'Is22=Is22' 'Rt=Rt'... } { 'Vs23=u23' 'Is23=Is23' 'Rt=Rt'... } { 'Vs24=u24' 'Is24=Is24' 'Rt=Rt'... } { 'Vs25=u25' 'Is25=Is25' 'Rt=Rt'... } { 'Vs26=u26' 'Is26=Is26' 'Rt=Rt'... } { 'Vs27=u27' 'Is27=Is27' 'Rt=Rt'... } { 'Vs28=u28' 'Is28=Is28' 'Rt=Rt'... } { 'Vs29=u29' 'Is29=Is29' 'Rt=Rt'... } { 'Vs30=u30' 'Is30=Is30' 'Rt=Rt'... } { 'Vs31=u31' 'Is31=Is31' 'Rt=Rt'... } { 'Vs32=u32' 'Is32=Is32' 'Rt=Rt'... } { 'Vs33=u33' 'Is33=Is33' 'Rt=Rt'... } { 'Vs34=u34' 'Is34=Is34' 'Rt=Rt'... } { 'Vs35=u35' 'Is35=Is35' 'Rt=Rt'... } { 'Vs36=u36' 'Is36=Is36' 'Rt=Rt'... } { 'Vs37=u37' 'Is37=Is37' 'Rt=Rt'... } { 'Vs3</pre>																																

