The i-v characteristics for the electrical component **C** on the right of terminals a-b is described by the linear equation:

I=0.023 V+−0.41I=0.023 V+−0.41

On the left, a current source, Is=0.504 AIs=0.504 A, and a resistor, R=38 ΩR=38 Ω are connected to the a-b terminals as shown. (pay attention to all the negative signs that might be missed)

a) What is the IV equation for the circuit on the left of terminals a-b?

I=I=  V+V+

(within three significant digits)

b) What are the numerical values for V and I that occur when the two circuits are joined as shown above?

V=V=  VV

I=I=  AA

(within three significant digits)

What is the power, and state what the component is.

Power (ofcomponentC)=Power (ofcomponentC)=  WW

(within three significant digits)

Component **C** is:

 a source

 a load

 neither

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[Try question again](https://prairielearn.engr.illinois.edu/pl/course_instance/32984/instance_question/52144604/)

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Correct answer

The correct answers are:

I=−0.02631578947368421 V+0.504I=−0.02631578947368421 V+0.504

V=18.533617929562432 VV=18.533617929562432 V

I=0.016273212379935953 AI=0.016273212379935953 A

P=0.30160150073635833 WP=0.30160150073635833 W

a load

The i-v characteristics for the electrical component **C** on the right of terminals a-b is described by the linear equation:

I=0.137 V+0.38I=0.137 V+0.38

On the left, a current source, Is=−0.187 AIs=−0.187 A, and a resistor, R=79 ΩR=79 Ω are connected to the a-b terminals as shown. (pay attention to all the negative signs that might be missed)

a) What is the IV equation for the circuit on the left of terminals a-b?

I=I=  V+V+

(within three significant digits)

b) What are the numerical values for V and I that occur when the two circuits are joined as shown above?

V=V=  VV

I=I=  AA

(within three significant digits)

What is the power, and state what the component is.

Power (ofcomponentC)=Power (ofcomponentC)=  WW

(within three significant digits)

Component **C** is:

 a source

 a load

 neither

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[Try question again](https://prairielearn.engr.illinois.edu/pl/course_instance/32984/instance_question/52144604/)

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Correct answer

The correct answers are:

I=−0.012658227848101266 V+−0.187I=−0.012658227848101266 V+−0.187

V=−3.788632326820603 VV=−3.788632326820603 V

I=−0.13904262877442264 AI=−0.13904262877442264 A

P=0.5267813981808941 WP=0.5267813981808941 W

a load

The i-v characteristics for the electrical component **C** on the right of terminals a-b is described by the linear equation:

I=−0.122 V+−0.375I=−0.122 V+−0.375

On the left, a current source, Is=−0.989 AIs=−0.989 A, and a resistor, R=79 ΩR=79 Ω are connected to the a-b terminals as shown. (pay attention to all the negative signs that might be missed)

a) What is the IV equation for the circuit on the left of terminals a-b?

I=I=  V+V+

(within three significant digits)

b) What are the numerical values for V and I that occur when the two circuits are joined as shown above?

V=V=  VV

I=I=  AA

(within three significant digits)

What is the power, and state what the component is.

Power (ofcomponentC)=Power (ofcomponentC)=  WW

(within three significant digits)

Component **C** is:

 a source

 a load

 neither

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[Try question again](https://prairielearn.engr.illinois.edu/pl/course_instance/32984/instance_question/52144604/)

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Correct answer

The correct answers are:

I=−0.012658227848101266 V+−0.989I=−0.012658227848101266 V+−0.989

V=5.615420236165779 VV=5.615420236165779 V

I=−1.060081268812225 AI=−1.060081268812225 A

P=−5.952801808868463 WP=−5.952801808868463 W

a source

The i-v characteristics for the electrical component **C** on the right of terminals a-b is described by the linear equation:

I=0.046 V+−0.231I=0.046 V+−0.231

On the left, a current source, Is=0.646 AIs=0.646 A, and a resistor, R=55 ΩR=55 Ω are connected to the a-b terminals as shown. (pay attention to all the negative signs that might be missed)

a) What is the IV equation for the circuit on the left of terminals a-b?

I=I=  V+V+

(within three significant digits)

b) What are the numerical values for V and I that occur when the two circuits are joined as shown above?

V=V=  VV

I=I=  AA

(within three significant digits)

What is the power, and state what the component is.

Power (ofcomponentC)=Power (ofcomponentC)=  WW

(within three significant digits)

Component **C** is:

 a source

 a load

 neither

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[Try question again](https://prairielearn.engr.illinois.edu/pl/course_instance/32984/instance_question/52144604/)

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Correct answer

The correct answers are:

I=−0.01818181818181818 V+0.646I=−0.01818181818181818 V+0.646

V=13.6643059490085 VV=13.6643059490085 V

I=0.397558073654391 AI=0.397558073654391 A

P=5.432355150912055 WP=5.432355150912055 W

a load

The i-v characteristics for the electrical component **C** on the right of terminals a-b is described by the linear equation:

I=−0.056 V+−0.023I=−0.056 V+−0.023

On the left, a current source, Is=0.608 AIs=0.608 A, and a resistor, R=100 ΩR=100 Ω are connected to the a-b terminals as shown. (pay attention to all the negative signs that might be missed)

a) What is the IV equation for the circuit on the left of terminals a-b?

I=I=  V+V+

(within three significant digits)

b) What are the numerical values for V and I that occur when the two circuits are joined as shown above?

V=V=  VV

I=I=  AA

(within three significant digits)

What is the power, and state what the component is.

Power (ofcomponentC)=Power (ofcomponentC)=  WW

(within three significant digits)

Component **C** is:

 a source

 a load

 neither

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Correct answer

The correct answers are:

I=−0.01 V+0.608I=−0.01 V+0.608

V=−13.717391304347826 VV=−13.717391304347826 V

I=0.7451739130434782 AI=0.7451739130434782 A

P=−10.221842155009451 WP=−10.221842155009451 W

a source

The i-v characteristics for the electrical component **C** on the right of terminals a-b is described by the linear equation:

I=−0.195 V+0.281I=−0.195 V+0.281

On the left, a current source, Is=0.637 AIs=0.637 A, and a resistor, R=21 ΩR=21 Ω are connected to the a-b terminals as shown. (pay attention to all the negative signs that might be missed)

a) What is the IV equation for the circuit on the left of terminals a-b?

I=I=  V+V+

(within three significant digits)

b) What are the numerical values for V and I that occur when the two circuits are joined as shown above?

V=V=  VV

I=I=  AA

(within three significant digits)

What is the power, and state what the component is.

Power (ofcomponentC)=Power (ofcomponentC)=  WW

(within three significant digits)

Component **C** is:

 a source

 a load

 neither

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[Try question again](https://prairielearn.engr.illinois.edu/pl/course_instance/32984/instance_question/52144604/)

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Correct answer

The correct answers are:

I=−0.047619047619047616 V+0.637I=−0.047619047619047616 V+0.637

V=−2.415508885298869 VV=−2.415508885298869 V

I=0.7520242326332796 AI=0.7520242326332796 A

P=−1.8165212158857504 WP=−1.8165212158857504 W

a source

The i-v characteristics for the electrical component **C** on the right of terminals a-b is described by the linear equation:

I=−0.126 V+0.262I=−0.126 V+0.262

On the left, a current source, Is=0.769 AIs=0.769 A, and a resistor, R=30 ΩR=30 Ω are connected to the a-b terminals as shown. (pay attention to all the negative signs that might be missed)

a) What is the IV equation for the circuit on the left of terminals a-b?

I=I=  V+V+

(within three significant digits)

b) What are the numerical values for V and I that occur when the two circuits are joined as shown above?

V=V=  VV

I=I=  AA

(within three significant digits)

What is the power, and state what the component is.

Power (ofcomponentC)=Power (ofcomponentC)=  WW

(within three significant digits)

Component **C** is:

 a source

 a load

 neither

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[Try question again](https://prairielearn.engr.illinois.edu/pl/course_instance/32984/instance_question/52144604/)

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Correct answer

The correct answers are:

I=−0.03333333333333333 V+0.769I=−0.03333333333333333 V+0.769

V=−5.471223021582733 VV=−5.471223021582733 V

I=0.9513741007194244 AI=0.9513741007194244 A

P=−5.2051798819936845 WP=−5.2051798819936845 W

a source