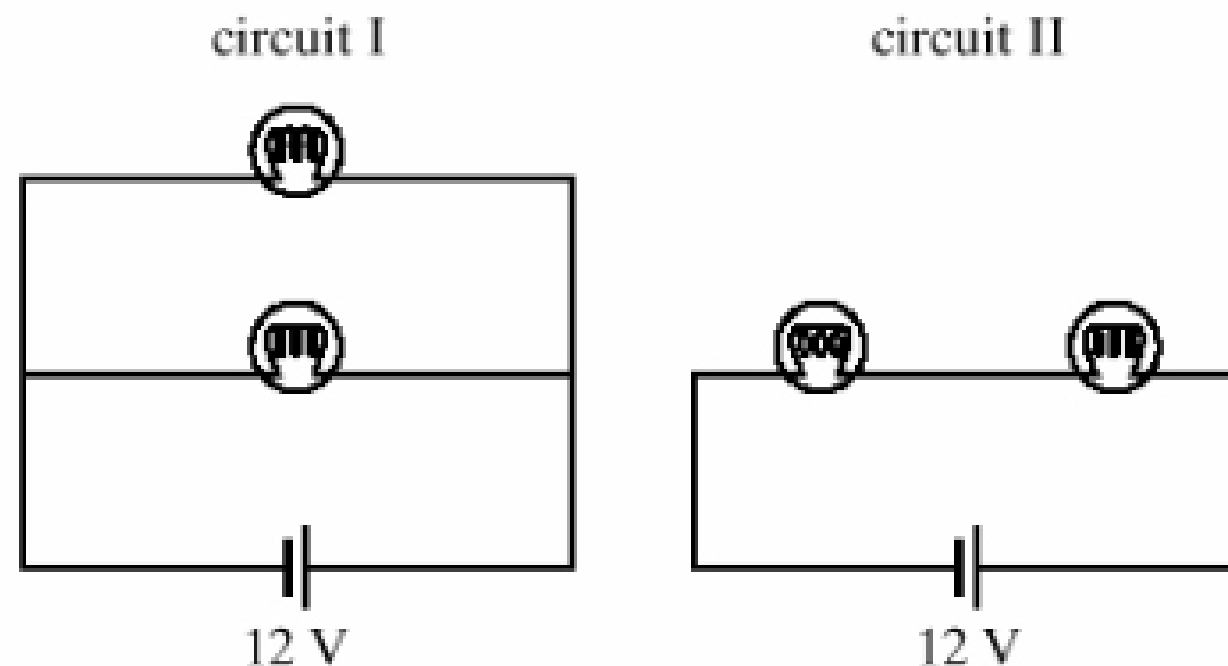


Circuits

→ The light bulbs in the circuits below are identical. Which configuration produces more light?

- ◆ (a) circuit I
- ◆ (b) circuit II
- ◆ (c) both the same

Circuit II has $\frac{1}{2}$ current of each branch of circuit I, so each bulb is $\frac{1}{4}$ as bright. The total light in circuit I is thus 4x that of circuit II.

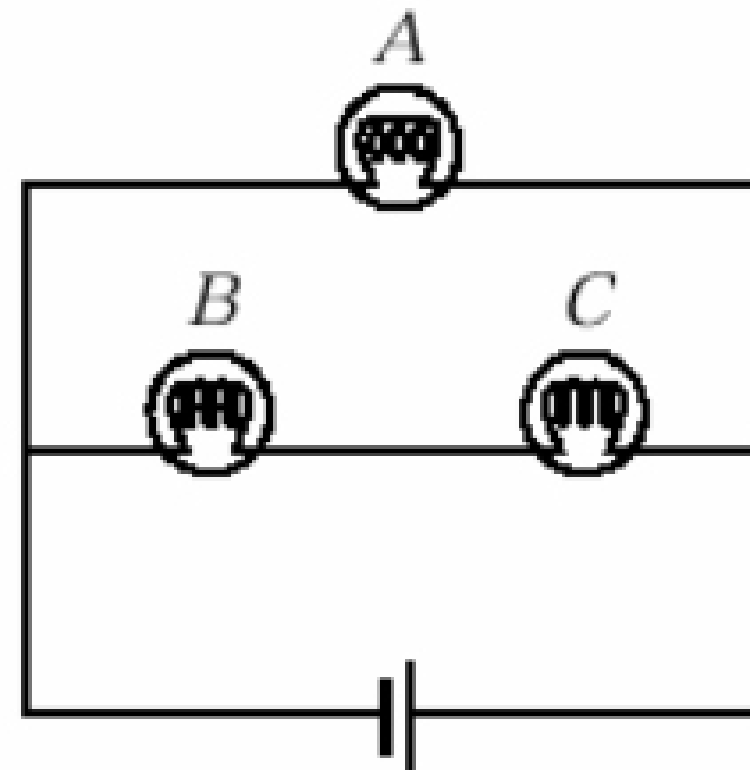


Circuits

→ The three light bulbs in the circuit are identical. The current flowing through bulb B, compared to the current flowing through bulb A, is

- ◆ a) 4 times as much
- ◆ b) twice as much
- ◆ c) the same
- ◆ d) half as much
- ◆ e) 1/4 as much

Branch of circuit A has $\frac{1}{2}$ resistance, thus it has 2x current.



Circuits

→ The three light bulbs in the circuit are identical. What is the brightness of bulb B compared to bulb A?

- ◆ a) 4 times as much
- ◆ b) twice as much
- ◆ c) the same
- ◆ d) half as much
- ◆ e) 1/4 as much

Use $P = I^2R$. Thus 2x current in A means it is 4x brighter.

