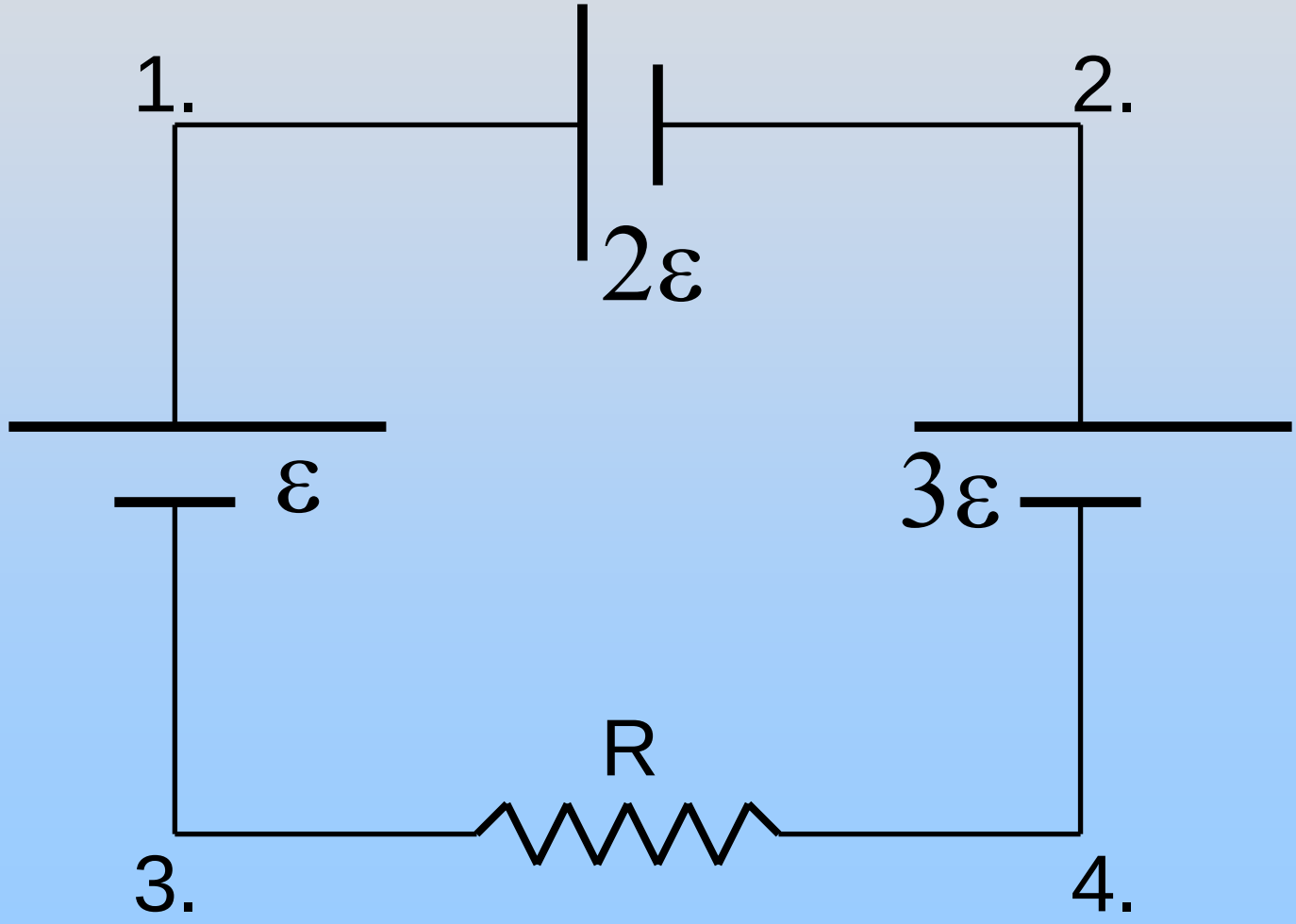
Concept Question: Potential in Circuits

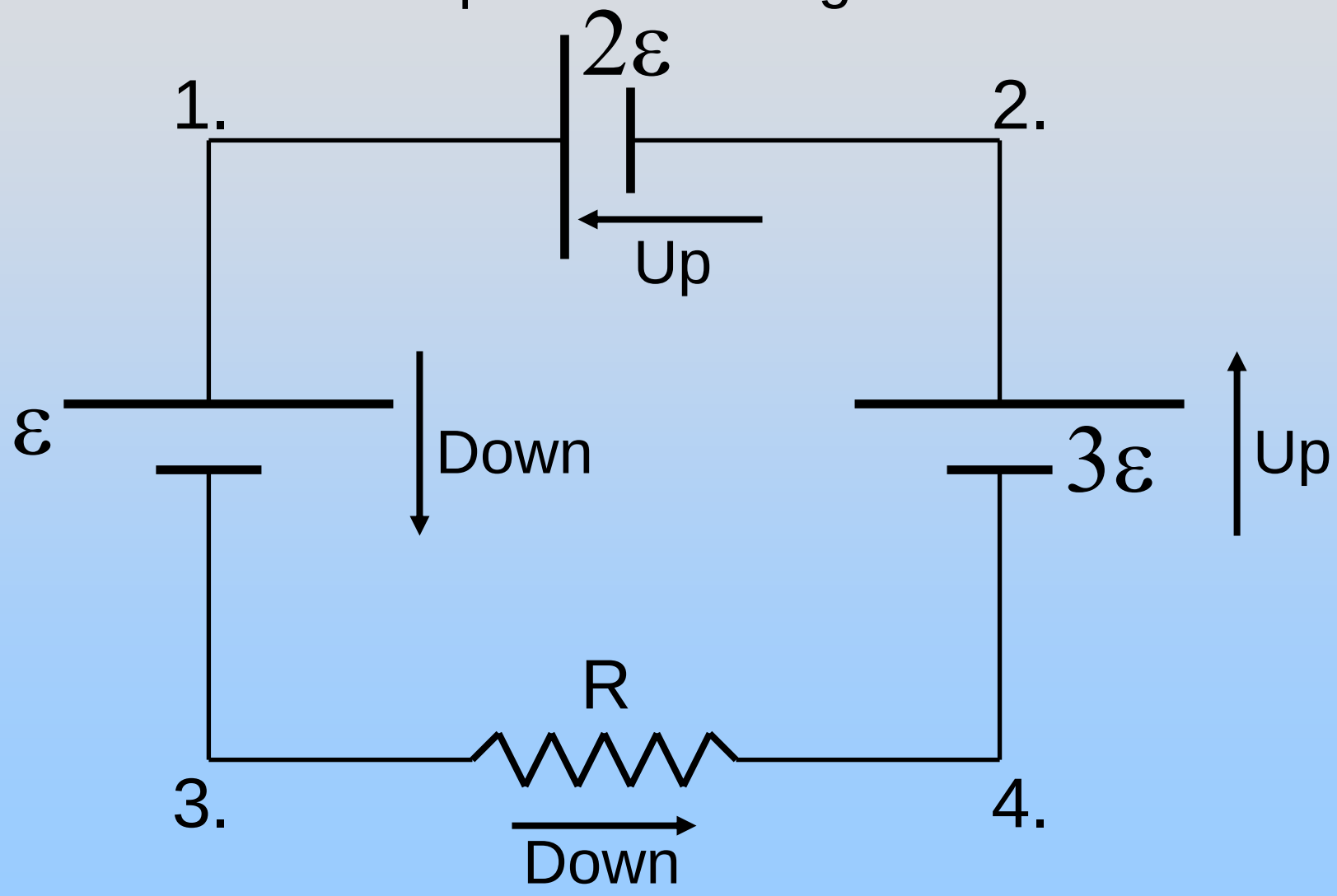
Where is the potential the highest in the below circuit?



1. 1
2. 2
3. 3
4. 4

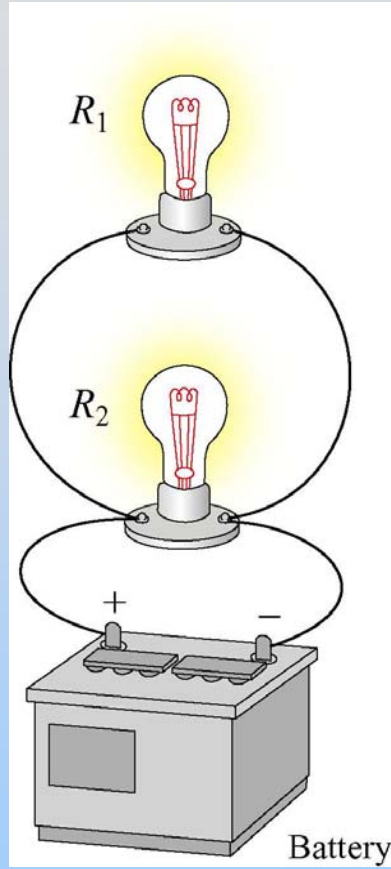
Con. Q. Ans.: Potential in Circuits

Answer: The potential is highest at corner 1.



Concept Question: Bulbs & Batteries

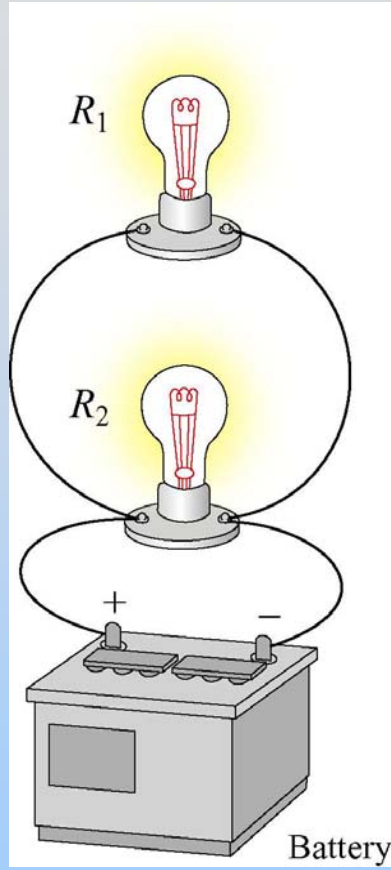
An ideal battery is hooked to a light bulb with wires. A second identical light bulb is connected in parallel to the first light bulb. After the second light bulb is connected, the current from the battery compared to when only one bulb was connected.



1. Is Higher
2. Is Lower
3. Is The Same
4. Don’t know

Concept Question Answer: Bulbs & Batteries

Answer: 1. More current flows from the battery



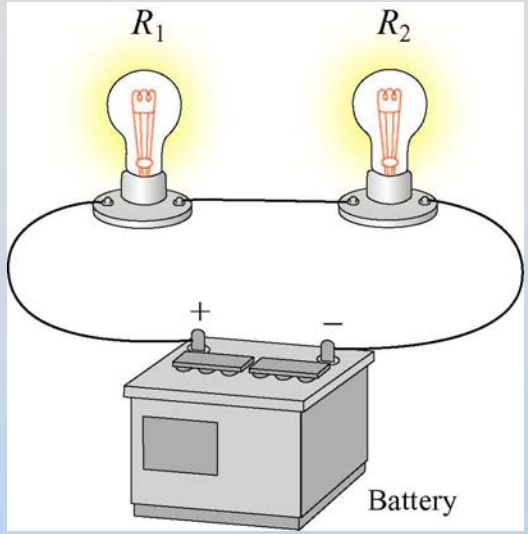
There are several ways to see this:

(A) The equivalent resistance of the two light bulbs in parallel is half that of one of the bulbs, and since the resistance is lower the current is higher, for a given voltage.

(B) The battery must keep two resistances at the same potential → I doubles.

Concept Question: Bulbs & Batteries

An ideal battery is hooked to a light bulb with wires. A second identical light bulb is connected in series with the first light bulb. After the second light bulb is connected, the current from the battery compared to when only one bulb was connected.



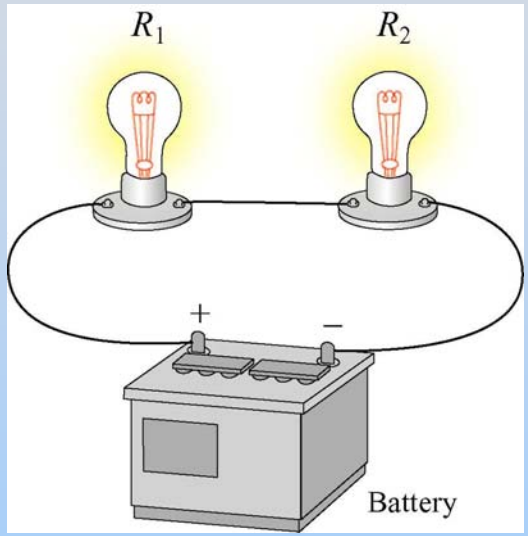
1. Is Higher
2. Is Lower
3. Is The Same
4. Don't know

Concept Question Answer: Bulbs & Batteries

Answer: 2. Less current flows from the battery

The equivalent resistance of the two light bulbs in series is twice that of one of the bulbs, and since the resistance is higher the current is lower, for the given voltage.

(Translation) The ski slope just got twice as hard so half as many skiers take it.



8.02SC Physics II: Electricity and Magnetism

Fall 2010