Re: Expressing fractions

Source: http://sci.tech−archive.net/Archive/sci.lang/2005−01/0723.html

---

From: Don A. Gilmore (*eromlignod_at_kc.rr.com*)
Date: 01/05/05

Date: Wed, 05 Jan 2005 21:10:51 GMT

"Lee Sau Dan" <danlee@informatik.uni−freiburg.de> wrote in message news:87mzvoikyv.fsf@informatik.uni−freiburg.de...
>>>>> "Don" == Don A Gilmore <eromlignodNOSPM@kc.rr.com> writes:
Don> Intensity?? That's a new one on me. Voltage is indeed what
Don> you must avoid. There is an often−misunderstood statement
Don> that "it's the current that kills you", citing that as little
Don> as 0.1 amperes can cause death.
>It is. With ZERO current, even 1 billion volts can't hurt you. It
>needs ENERGY to do the harm. Without an appropriately large current,
>the damage is limited. Of course, with 1 billion volt, then 1
>nanoampere could be enough. But it does NEED a current to kill you.

You're not making any sense. You *cannot* apply a voltage to a finite resistance without creating a current. Your understanding of electricity is not even that of an ordinary high school student. You don't *apply* current to something. There can be no current without voltage, just as there can be no water flow without pressure. You speak as if a current can magically and spontaneously occur in an object with no electromotive force. Stop boring us all with your captious foolishness and read a book for a change.

>Have you seen the experiment with a Van der Graaf generator? A
>person, properly insulated from the ground, puts a hand on the doom of
>the generator. The generator is turned on, and without minutes, the
>STATIC electricity built up on him is enough to make his hairs stand
>on their ends. Are you aware of the voltage between him and the
>ground? It can be up to millions of volts! Does it kill? No,
>because the current flowing through him to/from the generator is very
>small, and the current flowing through him to/from the ground is
>effectively zero.

You are confusing static electric charge with a supply of constant voltage. Do some actual study on the subject rather than rely on science fiction movies for knowledge.

Don> This is technically true, but such a statement is very
Don> misleading to those who don't understand the elementary
Don> principles of electricity. What does it take to *produce*

Don> 0.1 amps of current through your body?
>*You need to "close the circuit".*

No. Wrong again, Lee Sau Dan. You need to close the circuit AND you need to have the *exact* amount of voltage required to produce that 0.1 amps in your body at its present resistance. If your body's resistance at that moment is 10,000 ohms, 1 volt CANNOT produce 0.1 amps.

Don> The electrical outlets in your home can essentially be
Don> treated as "ideal" voltage sources.
>*I don't think so. First of all, it's alternating current. And the*
>*voltage is very high. A low voltage direct current is more suitable*
>*for most devices nowadays. (I hate to see each new device coming with*
>*its own transformer (a.k.a. ac adaptor), whose only purpose is to*
>*convert that from the ac mains to a 12V or 5V or 9V d.c. supply.)*

This is like talking to an imbecile child with boundless capacity for humiliation. An ideal voltage source is simply one that supplies a constant voltage regardless of load. That's essentially what your home outlet is. You can connect a 15−watt bulb to it, or you can connect a 1600−watt heater to it. It will provide 120 volts to each (or both).

Your comment about the "suitability" of DC power for battery devices doesn't even make any sense. They are DC because batteries are DC and because most of them are electronic, which requires the use of semiconductors that work using low−voltage DC. The fact that an outlet is AC has nothing to do with the fact that it provides constant voltage.

Also, batteries are approximate ideal voltage sources too, as long as currents are relatively low, which they are with small, hand−held devices. That's why they don't explode if you short them: they can't supply the tremendous current. But your home outlet, if it wasn't properly limited, would be happy to produce thousands of amps.

Don> In other words, the outlet provides a constant 120 volts,
Don> regardless of the load attached to it. The amount of current
Don> that results from the connection is a result of what
Don> appliance is connected to it.
>*Batteries do the same. Refer to the above URL.*
Don> So what happens when you plug your fingers into the socket?
Don> Well, that depends on how much the part of your body that you
Don> plug into it resists the electricity, just like any other
Don> appliance. It also depends on what the electricity passes
Don> through. If it passes from the forefinger to the middle
Don> finger of your right hand, there will be less resistance than
Don> through your whole body, so more current will pass. But
Don> since there aren't really any vital organs in your hand, it
Don> probably won't kill you. In fact you could survive a pretty
Don> high voltage through just one hand. With really high
Don> voltages, it might even vaporize your hand, but this is
Don> arguably a survivable injury.

>If you're properly insulated form the ground, you can really touch the
>live wire with one hand without being hurt. That's how they can now
>repair the high−voltage transmission wires without having to shut down
>the grid for a single second. I've just seen a demonstration on a TV
>documentary.

That's because your not completing a circuit. If you think those guys are exposed to zero danger from high voltage, think again. It's gruesomely deadly and theirs is a very dangerous job.

I'm tired of arguing with a dolt. Why don't you go profess your brilliant theories to alt.engineering.electrical and see how they treat you. Better yet, why don't you go to a physicians' newsgroup and dazzle them with your knowledge of brain surgery, or a lawyers' group and tell them all about probate litigation?

```
−−
Don A. Gilmore
Mechanical Engineer
Kansas City
```