

## YOUR FINAL EXAM

Consider a particle emission from a  $^{238}\text{U}$  nucleus. The nucleus emits the particle with energy  $E_0 + 4.2 \times 10^6 \text{ eV}$ . If the particle is contained inside the nuclear radius of  $r_N \sim 7 \times 10^{-15} \text{ m}$ , what is the distance that the particle travels through the barrier?

Well, duh. The distance is about as far as a sneeze travels if you really get your body into it, or the e between the moment when you realize you have to pee like a racehorse and the highway exit far far away, or the distance between a guy and his girlfriend after he says he has a little amusing ha ha crush on her sister ha ha isn't that funny?

Talk about traveling through the barrier.

Or the distance between age eight, when you thought you were going to be an astronaut or a fireman or a pro surfer or maybe all three at once, scheduling rocket launches in winter and surfing in summer and firefighting in between, savoring the moments when the cool bell rang in your cool house in which there would be a cool pole just like in the firehouse so you could jump out of bed and slide down the pole right into your cool car, and middle age, when recently you were talking learnedly about *assessed value*.

Or the distance between the words *I* and *do* on your wedding day.

Or the distance between the stunned silent joy in your head after your daughter slid out of your wife and the horrendous shriek you heard this morning when with all the good intentions in the world you opened the bathroom door to give her a towel *like she asked you to for heavens sake*.

Or the distance between the great idea of the international right of self-determination and a Private First Class age nineteen pointing his rifle at a kid age seven on the chance that the kid might have an Improvised Explosive Device strapped around his Thin Scrawny Chest.

Or the distance between might and right.

Or the distance between act and apology.

Or the distance between making a boatload of money and making your money fix a lot of leaky boats.

Or the distance between your house and the emergency room when your kid is bleeding all over the car and even though you know it's just a sliced ear and there's no way he's going to die or lose the floppy ting still the way he sobs makes you absolutely roaring blind with gibbering fear.

Or the distance between an elderly lady's lips and the rising flood waters in New Orleans as she sits in her wheelchair in her room with the water at her neck and as she said later *honey I prayed like I never prayed before*.

Or the distance between people who used to be married to each other.

Or the distance between your lips and the lips of the first girl you ever kissed in the paneled basement of her friend's house in the dark as you lean in and she leans in and neither of you knows what's supposed to happen or why or how and she has braces and you have spectacles and for a long rattled instant the whole event seems like spaceships docking in the deep silence of outermost space.

Or the distance between the falling falcon and the yearning earth.

Or the length in millimeters of the umbilical cord.

Or the distance between ideas the ragged words we drape on them.

Or between possibility and probability,

Or poetry and prayer,

Or who we are,

And who we might still be.

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Brian Doyle, Editor

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