

Hi, I'm Greg. I'm a NYC tutor! I love helping students. I tutor many subjects, assist with homework help, etc. I mainly specialize in specialized tests.

As it turns out, I haven't been able to get to do as many livestreams as I have in past years (yet, hopefully that changes). Therefore, I thought it would be fun to start a Problem Of The Day Series. I will put up a problem and leave it running for a while. You guys will then analyze it, and come up with possible solutions and alternative solutions on your own. I'll eventually post the answer in some manner.

For now we'll play it by ear how that will happen and for how long I'll leave up a problem. But right now I'm thinking of keeping the problem up maybe 2 hours minimum and maybe even in some cases 4 or 5 hours depending upon the dynamics and my situation. Unlike my AMA (Ask Me Anything) livestream sessions, I will not be checking in every few minutes although I may from time to time join into the discussion. Again, the idea is for you guys to discuss out the problem.

Please be respectful to each other in this endeavor and let's make this fun, educational and forward-thinking. Keep the comments within the spirit of what I'm doing here. Please email me at GregsTutoringNYC@gmail.com if needed.

HERE'S THE PROBLEM: <—
=====

An upright aquarium of length 10 inches, height 11 inches, and width 12 inches completely filled with water weighs 20 pounds. When the same aquarium has half the volume of water, the same aquarium and adjusted capacity of water together weigh 15 pounds. How much does the same empty aquarium weigh upside down with a 5 pound rock atop the same aquarium?

HERE'S THE SOLUTION:
=====

The aquarium and water being 20 pounds together can be expressed as:

$$a + w = 20$$

The aquarium with half the water can be expressed as:

$$a + w/2 = 15$$

Through various techniques we can see that $w/2$ must be 5.

$$\therefore w = 10$$

Both the aquarium and the water needed for complete volume each weight 10 pounds respectively.

The aquarium weighs the same whether it is upright or upside down, so that doesn't matter.

\therefore The aquarium with a 5 pound rock atop it would be $10 + 5 = 15$ pounds

- Greg / GregsTutoringNYC@gmail.com LLAP ☺