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) lifestream 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: <———
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To prepare a plan for SHSAT studying, a student figured they would make a tight schedule and therefore spend one-third of their time on ELA reading comprehension, one-sixth of their time on ELA grammar, and 12 days of their time on math multiple choice. The student then planned to spend one-sixth of their remaining time on math grid-ins. They felt that would leave a few days to relax at the end. There was only one problem: when the student went through with the plan, the student ended up with way more extra days than they wanted with twenty-five extra days unaccounted for. How many days in total did the student originally figure their plan would take?

HERE'S THE SOLUTION:
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Let d be the number of days in the study plan. Spending one-third of their time on ELA reading comprehension, one-sixth of their time on ELA grammar, and 12 days of their time on math multiple choice can be represented as:

$$\frac{d}{3} - \frac{d}{6} - 12$$

Therefore if d is the total days, the remaining days thus far are:

$$d - \frac{d}{3} - \frac{d}{6} - 12$$

We can simplify this, so getting a common denominator gives:

$$\frac{6d}{6} - \frac{2d}{6} - \frac{d}{6} - 12 = \frac{d}{2} - 12 = r \text{ (r is the remaining days)}$$

If the student then planned to spend one-sixth of their remaining time on math grid-ins some solvers of this problem would just do r/6. But we're subtracting from the remaining not just getting 1/6 of the remaining, so what we're looking for is 5/6 of r not 1/6 of r. So that gives us:

$$\frac{5}{6} \left(\frac{d}{2} - 12 \right) = 25$$

Multiplying both sides by 6/5 gives:

$$\frac{d}{2} - 12 = 30$$

d/2 = 42 ∴ d = 84 days total

Double checking:
1/3 of 84 = 28
1/6 of 84 = 14
12 days   = 12
            ——
            54 days

84 − 54 = 30 remaining days
1/6 of 30 = 5
30 − 5 = 25 days (same as 5/6 of 30)

— Greg / GregsTutoringNYC@gmail.com   LLAP ☺