

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

What is this? I don't always have time to do a livestream, therefore instead I thought it would be fun to do a Problem Of The Day series. In this series I will put up a problem and 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 the past this has resulted in many interesting discussions. Some questions will be easy, others hard, some perhaps with a twist, some will be SHSAT 8 oriented while some SHSAT 9 oriented.

I'll leave a problem up for about an hour, however depending upon the dynamics and complexity of the question it could be much longer. Unlike my AMA (Ask Me Anything) livestream sessions, I may not always be able to join in the discussion. Again, the idea is for you guys to discuss things out.

Please be respectful in this endeavor. Let's keep this fun, educational, and forward-thinking. Keep your comments within this spirit. If needed, feel free to email me at GregsTutoringNYC@gmail.com. Past questions are at <https://www.GregsTutoringNYC.com/POTD>

HERE'S THE PROBLEM: <—

=====

34% of 8th graders will take the SHSAT and 66% of 8th graders are fine with choosing a high school outside of their borough. 33% of 8th graders will take the SHSAT and are also fine with choosing a high school outside of their borough. What percentage of 8th graders won't be taking the SHSAT and are not fine with choosing a high school outside of their borough?

E. 33 F. 34 G. 66 H. 67

HERE'S THE SOLUTION:

=====

One way to solve this is to establish a table. Fill in the givens. Compute totals, and fill in remaining information.

For this table, we have 2 things being compared against 2 other things.

The first 2 things are taking the SHSAT (TS) and not taking the SHSAT (NTS).

The second 2 things are being fine with an out of borough HS (OB) and not being fine with it (NOB).

Tots reflects totals. Let's set up our 2x2 table:

	OB	NOB	Tots
TS			
NTS			
Tots			

34% of 8th graders will take the SHSAT, references a total, and yields:

	OB	NOB	Tots
TS			34%
NTS			
Tots			

66% of 8th graders are fine with choosing a high school outside of their borough also references a total and yields:

	OB	NOB	Tots
TS			34%
NTS			
Tots	66%		

33% of 8th graders will take the SHSAT and are also fine with choosing a high school outside of their borough references the intersection between choices. That yields:

	OB	NOB	Tots
TS	33%		34%
NTS			
Tots	66%		

The question of what percentage of 8th graders won't be taking the SHSAT and are not fine with choosing a high school outside of their borough is also an intersection between choices and is reflecting by ANS below:

	OB	NOB	Tots
TS	33%		34%
NTS		ANS	
Tots	66%		

To determine this value, we need to fill in some if not all of the other empty boxes.

If the total fine with out of borough is 66% and of those 33% are SHSAT testers, then $66-33=33\%$ are 8th graders not taking the SHSAT but fine with choosing a high school outside of their borough.

If the total of all SHSAT takers is 34% and 33% are fine choosing an out of borough high school, then $34-33=1\%$ are SHSAT takers who are not fine with an out of borough high school.

	OB	NOB	Tots
TS	33%	1%	34%
NTS	33%	ANS	
Tots	66%		

As all numbers are percents, they should add up to 100%:

	OB	NOB	Tots
TS	33%	1%	34%
NTS	33%	ANS	
Tots	66%		100%

Hence $100-66=34\%$, and $100-34=66\%$:

	OB	NOB	Tots
TS	33%	1%	34%
NTS	33%	ANS	66%
Tots	66%	34%	100%

Hence we can use either all non-SHSAT takers minus non-SHSAT takers fine with outer borough ($66-33=33\%$) or all not fine with out of borough minus SHSAT takers not fine with out of borough ($34-1=33\%$). Using either we see that ANS is 33%. Choice E.

Always reread the question and redo computations to ensure understanding of the question and that your bookkeeping is correct.

- Greg / GregsTutoringNYC@gmail.com LLAP ©